

Integrated Waste Management Disaster Plan

*Guidance for local government on disaster
debris management*

January 1997



Integrated
Waste
Management
Board

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TABLE OF CONTENTS

INTEGRATED WASTE MANAGEMENT DISASTER PLAN

CHAPTER - TITLE	PAGE
EXECUTIVE SUMMARY	
CHAPTER 1 - GOVERNMENT COORDINATION	
Intradepartmental relationships.....	i
Debris manager/debris “team”	i
Mutal aid	i
Table: Departments and Functions Represented in the Recovery Process.....	i
Disaster events	i
Emergency response plans and procedures	i
Table: Flow of requests for assistance	i
Emergency Planning	i
Local Emergency Response Plan.....	i
State Emergency Plan	i
Federal Response Plan	i
SEMS Training	i
Emergency Response Procedures	i
Local, state, and federal agencies involved in debris management	i
Local responsibilities	i
Local Enforcement Agency	i
Emergency waiver of standards regulations	i
State agency responsibilities.....	i
Federal agency responsibilities.....	ii
CHAPTER 2 - PRE-DISASTER ASSESSMENT	
Local Checklists.....	ii
Disaster event analysis and waste characterization analysis	ii
Temporary storage sites	ii
Ed-uses and markets	ii
Facilities and processing operations	ii
Processing techniques and barriers	ii
Processing equipment needs	ii
Funding options	ii
Contract needs.....	ii
Mutual Aid Agreements.....	ii
Labor needs.....	ii
Local ordinances	ii

CHAPTER 3 - DEBRIS MANAGEMENT PROGRAMS

Diversion program become a priority	ii
Federal debris removal criteria and guidelines	ii
Debris removal and diversion strategies	ii
Project scope	ii
Program barriers	ii
Labor needs	ii
Equipment and processing requirements	iii
Method of operation	iii
Program length	iii
Funding options	iii
Public information program	iii
Contingency plan	iii
Regional coordination	iii
Diversion incentives	iii
Documentation and tracking system	iii
Training program	iii
Records retention system and archives	iii
Final report	iii

CHAPTER 4 - TEMPORARY STORAGE SITES

Need for sites	iii
Criteria to evaluate potential sites	iii
Identifying potential sites	iii
Emergency Waiver of Standards Regulations	iii
Permits or variances required	iii
Environmental review	iii
Site development and operation plan	iii
Inspection and Site Management Guidelines	iii
Site Restoration Plan	iv

CHAPTER 5 - CONTRACTS

Contract services assessment	iv
Coordination with haulers	iv
Short- and long-term operations assessment	iv
Short-term operations	iv
Long-term operations	iv
Contract selection	iv
Time and Material Contract	iv
Unit Price Contract	iv
Lump Sum Contract	iv
Special engineering organization	iv
Diversion requirements and sample language	iv
City of Santa Clarita Cleanup Contract	iv
City of Oakland, Master Contract, 1991 Firestorm	iv
City of Los Angeles, Building Demolition Contract, 1994 Northridge Earthquake	iv

City of Los Angeles, Unit Price Contract	iv
1994 Northridge Earthquake.....	iv
U.S. EPA contract for Household Hazardous Waste Collection, 1995 Floods	iv
General Considerations.....	iv
Accounting Considerations.....	iv
Contract Administration Procedures.....	v

CHAPTER 6

OES Role	v
Reimbursement program.....	v
Federal/State cost share	v
FEMA/State Agreement.....	v
Reimbursement for diversion programs.....	v
City of Los Angeles earthquake recycling program	v
Payment and Payment Forms.....	v
Special Trust Fund	v

CHAPTER 7 - MUTUAL AID

California Mutal Aid Program.....	v
Mutual Aid for Debris management	v
Emergency Managers Mutual Aid.....	v
Actions to take to assess needs	v

CHAPTER 8 - CURBSIDE PICKUP PROGRAM

Quantification of material.....	v
Processing and facility needs	v
Labor and equipment needs	v
Program funding	v
Method to locate waste	v
Method of implementation.....	vi
Temporary storage sites	vi
Markets for collected materials.....	vi
Contract requirements.....	vi
Tracking/documentation system	vi
Public information program.....	vi
Methods to encourage diversion	vi
Monitoring and enforcement program.....	vi
Final Report	vi
Curbside Pickup Site Identification	vi

CHAPTER 9 - BUILDING DEMOLITION PROGRAM

City of Los Angeles Building Demolition and Debris Removal Program (1/94)	vi
Planning Phase	vi
Pre-demolition phase	vi
Demolition phase	vi
Post-demolition phase.....	vi
Diverting demolition debris	vi
Humboldt County demolition program (4/92).....	vi

Hints and policy actions.....	vi
CHAPTER 10 - HOUSEHOLD HAZARDOUS WASTE COLLECTION PROGRAM	
Introduction.....	vi
Background on HHW	vii
Purpose of disaster planning for HHW	vii
Contents for a HHS collection program disaster plan	vii
Existing HHS collection program.....	vii
Local HHS Disaster Coordinator	vii
Checklists	vii
Mutual Aid Agreements.....	vii
Potential collection sites and equipment.....	vii
Contractor/hauler agreements	vii
HHW Collection Events	vii
Public Information/Notification.....	vii
Loadchecking programs.....	vii
State HHW Permits.....	vii
State and Federal Assistance/Funds.....	vii
Documenting costs, quantities, types of HHW collected	vii
Establishing a HHW collection program	vii
Initial steps	vii
Public involvement	vii
Waste Acceptance Criteria.....	vii
Type of Collection Program.....	vii
HHW contract/hauler	vii
Site Operation Plan	vii
Health and Safety Plan.....	viii
Emergency Response Plan.....	viii
Segregation and Sorting Protocols.....	viii
Reuse/Recycling Program.....	viii
CHAPTER 11 - PUBLIC INFORMATION PROGRAM	
Media center for debris management.....	viii
Media contacts	viii
Hotline	viii
Advertising programs	viii
Interpreters and translators.....	viii
Public information campaign.....	viii
Regional cooperation	viii
CHAPTER 12 - REBUILDING USING RECYCLED-CONTENT PRODUCTS	
Inert products	viii
Building products.....	viii
Building product selection	viii
Assistance to manufacturers	viii
Jobsite separation	viii

CHAPTER 13 - STANDARDIZED EMERGENCY MANAGEMENT SYSTEM (SEMS)

Five organizational levels	viii
SEMS components	ix

CHAPTER 14 - EMERGENCY AND DISASTER DECLARATION PROCESS

Types of declarations	ix
Local Declaration of Emergency	ix
Governor's State of Emergency Proclamation	ix
President's Declaration of a Major Disaster or Emergency	ix

CHAPTER 15 - STATE NATURAL DISASTER ASSISTANCE (NDAA) PROGRAM

Declaration of a Local Emergency	ix
Funding for the NDAA Program	ix
Cost Share	ix
Withhold or retention	ix
Assistance Available with Governor's Proclamation	ix
Application procedure.....	ix

CHAPTER 16 - FEDERAL PUBLIC ASSISTANCE PROGRAM

Required steps.....	ix
Work categories	ix
Federal assistance to state and local governments.....	ix
Regulations Governing Disaster Assistance.....	ix
Debris Removal Guidelines	ix
Debris Eligibility Criteria	ix
Debris Removal Eligibility	ix
Public Assistance Building Demolition Program	x
Health and Safety	x
Attractive Nuisance.....	x
Health Hazard	x
Buy-out Program.....	x
Damage Assessment and Damage Survey Reports	x
Environmental Review Requirements	x
Hazard Mitigation	x
Historic Review Requirements	x

CHAPTER 17 - CAST STUDIES

Oakland Firestorm: Curbside Pickup Program, October 20, 1991	x
City of Los Angeles: Curbside Picup Program, 1994 Northridge Earthquake Response.....	x
City of Santa Clarita: 1994 Northridge Earthquake Response	x

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EXECUTIVE SUMMARY

INTEGRATED WASTE MANAGEMENT DISASTER PLAN:

incorporating guidance on disaster debris management for local governments

Authority: The *Integrated Waste Management Disaster Plan* (Plan) has been prepared pursuant to Assembly Bill 2920 (Lee, 1992, Stats. 1992, c.436). This legislation requires the Board to develop a plan that provides for the handling, storage, processing, transportation, diversion from disposal sites, or disposal where absolutely necessary, of solid waste, resulting from a state or local emergency. This mandate is codified in Public Resources Code (PRC) section 43035.

The Plan has been prepared in consultation with the Governor's Office of Emergency Services (OES) with input from the Federal Emergency Management Agency (FEMA), Local Enforcement Agencies, local emergency services personnel, local solid waste coordinators, and the public.

Board role: The California Integrated Waste Management Board (Board) is committed to assuring that solid waste is properly managed in the event of a natural disaster or emergency.

One of the Board's goals is to assist in the expeditious recovery of areas affected by natural disasters or emergencies while providing for the protection of public health and safety. To the maximum degree feasible, the Board will form partnerships with local jurisdictions in the development of debris management plans to recycle, reuse, or otherwise divert disaster debris from disposal.

Advance planning: The key to a successful disaster debris management program is advance planning. In the aftermath of a disaster, the primary focus is restoring and maintaining public health and safety. Consequently, debris diversion programs such as recycling and reuse can quickly become secondary, to be established only if there are time and staff to undertake the effort, if at all.

Preparedness will assist the State in diverting significant amounts of valuable materials that would otherwise be disposed of. Furthermore, there will be the added benefit of preservation of the State's landfill capacity.

- Need for plan:** The debris left after a major disaster such as an earthquake, fire, or flood can be massive and create its own set of public health and safety problems.
- Given the magnitude of the cleanup efforts after the Northridge earthquake in 1994 and the devastating fires in Oakland and Malibu in 1991, it became clear that having a debris management plan in place before a disaster is critical to diverting massive amounts of debris from landfills.
- Had recycling and reuse programs not been established after these disasters, more than a million tons of disaster debris would have been disposed of. The City of Los Angeles' Earthquake Recycling Program alone (established after the 1994 Northridge earthquake) saved 1,629,788 tons, or about 5,350,000 cubic yards of landfill space.
- Purpose:** This Plan is designed to provide guidance and assistance to the disaster preparedness planning efforts of local government. Its primary purpose is to assist local jurisdictions in writing a disaster debris management plan for their communities and to encourage the establishment of diversion programs for the debris generated after a disaster.
- To this end, the Plan provides an overview of the debris management issues that a solid waste manager will face after a disaster and highlights those diversion programs that have been proven to be successful.
- Attachments:** Attached to the respective chapters of the Plan will be supporting documents such as sample disaster debris removal contracts that provide for waste diversion, a model mutual aid agreement, and other guidance documents to assist the Solid Waste Recycling Coordinators in their efforts related to emergency disposal and diversion of disaster debris.
- Plan organization:** The Plan is divided into 17 chapters that cover the various aspects of a debris management strategy. Because these chapters were prepared and can be used as stand-alone documents, some material is repeated in various chapters.

There are four major parts to the Plan:

1. Chapters 1-12 focus on government coordination, pre-disaster planning, and debris management programs;
2. Chapters 13-16 focus on the emergency management system;
3. Chapter 17 consists of case studies of the 1991 Oakland Firestorm, and the City of Los Angeles and the City of Santa Clarita responses to the 1994 Northridge earthquake; and
4. Checklists at the beginning of chapters summarize the tasks to be undertaken by local government, primarily the designated debris manager and team.

Checklists:

Abbreviated checklists are included below to provide a summary of the tasks to be undertaken in implementing diversion programs. These checklists can be used as a shortcut to determining the debris strategy to be undertaken and the programs to be implemented.

Only those chapter checklists related to debris programs [those denoted with an asterisk (*)] are included for easy reference in the Plan. The remaining chapters contain a brief description of the chapter highlights.

Debris manager:

The checklists are intended for the debris jurisdiction's manager; that is, the person designated with the responsibility for coordinating the debris clearance/removal activities and establishing diversion programs for the disaster debris. It is also assumed that a debris "team" will be established to assist in the debris management operations.

Content: Following is a list of chapters and titles for the *Integrated Waste Management Disaster Plan*.

CHAPTER	TITLE
1*	Government Coordination
2*	Pre-disaster Assessment
3*	Debris Management Programs
4*	Temporary Storage Sites
5*	Contracts
6	Reimbursement
7	Mutual Aid
8*	Curbside Collection Program
9*	Building Demolition Program
10*	Household Hazardous Waste Program
11*	Public Information Program
12*	Rebuilding Using Recycled-Content Products
13	Standardized Emergency Management System
14	Emergency and Disaster Declaration Process
15	State Natural Disaster Assistance Act (NDAA) Program
16	Federal Public Assistance Program
17	Case Studies: <ul style="list-style-type: none"> ◆ Oakland Firestorm, 10/20/91 ◆ City of Los Angeles Curbside Pickup Program following the 1/17/94 Northridge earthquake ◆ City of Santa Clarita 1/17/94 Northridge earthquake response

CHAPTER 1

GOVERNMENT COORDINATION

Background:

In the event of a disaster, local government officials must know whom to contact for assistance and must understand the roles and responsibilities of the other governmental agencies involved in order to effectively coordinate recovery efforts. This chapter outlines the roles and responsibilities of the local, state, and federal agencies with respect to disaster debris management.

In addition, it is critical that a jurisdiction establish effective coordination within its own organization. Information covered includes:

- ◆ a description of an emergency organization in terms of who is responsible for what; identification of departmental relationships;
- ◆ designation of a debris manager and team;
- ◆ identification of a management structure;
- ◆ identification of available resources (staff and equipment); and description of mutual aid agreements.

CHECKLIST

CHAPTER 1 GOVERNMENT COORDINATION

- ☐ **STEP 1:** Define intradepartmental relationships, designate a debris manager and establish a debris "team."
- ☐ **STEP 3:** Outline and evaluate potential for specific disaster events and develop functional checklists by disaster for debris manager and team.
- ☐ **STEP 4:** Become familiar with emergency plans, procedures, and the Standardized Emergency Management System.
- ☐ **STEP 5:** Identify local, state, and federal agencies involved in disaster debris management.

CHAPTER 2

PRE-DISASTER ASSESSMENT

Background:

This chapter discusses the need to conduct a program assessment in each community to determine the quantity and types of materials likely to be generated in a particular disaster. This is important because development of particular diversion programs will depend on the type and amount of debris generated as well as the end-uses identified for the materials.

Further, by conducting a pre-disaster assessment, a jurisdiction will have identified the specific areas that must be developed in a debris management plan.

Contents:

Brief descriptions of the other types of information to be included in this assessment are:

- ◆ identification of type of disaster likely to occur in a particular locality;
- ◆ identification of transportation corridors and development of alternate routes;
- ◆ identification of recyclers, haulers, and processors in the area available to handle the debris;
- ◆ contingency plans for waste disposal;
- ◆ identification of temporary storage or staging areas for debris;
- ◆ facilities to handle/process debris and the amount that can be handled; and
- ◆ markets for the generated materials.

Pre-planning:

Pre-planning is the most effective way to ensure diversion activities are carried out after a disaster. By having local policies in place to require that recycling or other diversion programs be implemented after a disaster, or routinely, can lend critical support to a jurisdiction's request to receive FEMA reimbursement for recycling or other diversion programs.

CHECKLIST

CHAPTER 2 PRE-DISASTER ASSESSMENT

- ☐ **STEP 1:** Develop local checklists of available resources.
- ☐ **STEP 2:** Conduct a disaster event analysis and waste characterization analysis.
- ☐ **STEP 3:** Identify temporary storage sites.
- ☐ **STEP 4:** Identify end-uses and markets.
- ☐ **STEP 5:** Identify facilities and processing operations.
- ☐ **STEP 6:** Identify processing techniques and barriers.
- ☐ **STEP 7:** Identify processing equipment needs.
- ☐ **STEP 8:** Review funding options.
- ☐ **STEP 9:** Determine contract needs.
- ☐ **STEP 10:** Review Mutual Aid Agreements.
- ☐ **STEP 11:** Identify labor needs.
- ☐ **STEP 12:** Review local ordinances.

CHAPTER 3

DEBRIS MANAGEMENT PROGRAMS

Background:

This chapter contains the "how-to" information a local jurisdiction would need to establish a debris management program. Three programs are highlighted: curbside collection, building demolition, and household hazardous waste. The primary issues and the minimum requirements that should be considered in establishing such programs are presented below:

- ◆ guidelines for establishing a curbside pick-up program, building demolition program, or household hazardous waste collection program;
- ◆ temporary storage areas;
- ◆ end-uses for materials generated;
- ◆ type and quantity of equipment needed for debris removal;
- ◆ labor, facility, and processing requirements;
- ◆ contract and ordinance language to ensure diversion of disaster debris;
- ◆ preparation and distribution of materials to the public, including non-English speakers.

CHECKLIST

CHAPTER 3 DEBRIS MANAGEMENT PROGRAMS

- ☐ **STEP 1:** Make diversion programs a priority.
- ☐ **STEP 2:** Become familiar with federal debris removal criteria and guidelines.
- ☐ **STEP 3:** Develop a debris removal strategy.
- ☐ **STEP 4:** Identify project scope.
- ☐ **STEP 5:** Select debris management program(s).
- ☐ **STEP 6:** Set program goals.
- ☐ **STEP 7:** Identify labor needs.
- ☐ **STEP 8:** Identify processing equipment needs.
- ☐ **STEP 9:** Determine method of operation.
- ☐ **STEP 10:** Adapt program length.
- ☐ **STEP 11:** Review funding options.
- ☐ **STEP 12:** Establish public information program.
- ☐ **STEP 13:** Develop monitoring and enforcement program.
- ☐ **STEP 14:** Identify program barriers.
- ☐ **STEP 15:** Develop a contingency plan.
- ☐ **STEP 16:** Pursue regional coordination.

- ☐ **STEP 17:** Develop incentives for diversion.
- ☐ **STEP 18:** Set up accounting/tracking system for debris programs.
- ☐ **STEP 19:** Develop a training program.
- ☐ **STEP 20:** Set up records retention system and archives.
- ☐ **STEP 21:** Prepare a final report of program activities and results.

CHAPTER 4

TEMPORARY STORAGE SITES

- Need for:** Local governments have identified temporary storage sites as the primary obstacle in establishing a debris management program. Without the ability to stockpile or store the disaster debris until such time as a jurisdiction can turn its attention to processing and marketing the materials, the debris is probably destined for the landfill.
- Do beforehand:** Securing storage sites is best done before a disaster so that arrangements, such as leases and permits for the land, can be accomplished quickly. Given that the immediate response is for lifesaving activities, recycling and diversion programs often become secondary in importance. Having storage sites available in advance gives a jurisdiction additional time to develop diversion strategies and programs to handle the disaster debris.
- Contents:** This chapter will discuss determining the need for temporary storage sites and the criteria to use in selecting such sites.
- Waiver of standards:** In addition, the emergency waiver of standards regulations can provide some additional options for jurisdictions in establishing temporary storage sites. (The regulations are found in California Code of Regulations, Title 14, Division 7, Chapter 3, Article 3, sections 17210 through 17210.9).
- If authorized by the Local Enforcement Agency, an emergency waiver of standards can be granted to a solid waste facility operator to establish a locally-approved temporary transfer or processing site in the event of a proclamation of a state of emergency.

CHECKLIST

CHAPTER 4 TEMPORARY STORAGE SITES

- ☐ **STEP 1:** Determine need for facilities.
- ☐ **STEP 2:** Develop criteria to evaluate potential sites.
- ☐ **STEP 3:** Identify temporary storage sites.
- ☐ **STEP 4:** Consult with local solid waste facility operator and Local Enforcement Agency on Emergency Waiver of Standards regarding establishment of temporary storage or processing areas.
- ☐ **STEP 5:** Identify permits or variances.
- ☐ **STEP 6:** Perform environmental review of site.
- ☐ **STEP 7:** Prepare a site development and operation plan.
- ☐ **STEP 8:** Prepare inspection and site management guidelines.
- ☐ **STEP 9:** Prepare a site restoration plan.

CHAPTER 5 CONTRACTS

Importance of:

Contracts and franchise agreements are pivotal to ensuring a successful debris management program. Unless diversion is specified, it is likely the collected debris will be disposed of. By developing model contracts for debris removal and recycling, and by pre-qualifying contractors in advance, a jurisdiction can save valuable time in implementing its recovery operations.

Regardless of the diversion program selected, the best way to divert disaster debris from landfills is to ensure that the contracts for debris removal include provisions requiring that the disaster debris be diverted from landfills through reuse, recycling, or other waste diversion techniques. Examples of contract language requiring diversion of disaster debris are included for reference.

Options:

The jurisdiction has a number of options available in preparing contracts, depending upon the nature of the disaster and the expected recovery time. This chapter presents the Time and Material, Lump Sum, and Unit Price contracts, describing the advantages and disadvantages of each.

Contract agreements are often the vehicle through which the debris removal and recycling operations will occur. As a result, it is important for a jurisdiction to work closely with its waste hauler or franchise prior to a disaster to determine the services and equipment they can provide in a disaster. These companies can provide essential services and equipment as a jurisdiction develops its debris management strategy and programs.

CHECKLIST

CHAPTER 5 CONTRACTS

- ☐ **STEP 1:** Perform contract services assessment.
- ☐ **STEP 2:** Coordinate with haulers.
- ☐ **STEP 3:** Assess need for short- and long-term operations.
- ☐ **STEP 4:** Select and execute contract.
- ☐ **STEP 5:** Determine need for special engineering organization.
- ☐ **STEP 6:** Develop project quantity/cost estimates.
- ☐ **STEP 7:** Develop diversion language for contracts.
- ☐ **STEP 8:** Review general considerations.
- ☐ **STEP 9:** Review accounting considerations.
- ☐ **STEP 10:** Review contract administration procedures

CHAPTER 6 REIMBURSEMENT

Background:

A disaster can be devastating to a jurisdiction's resources, both in personnel and in funds. The job of protecting lives and property will begin immediately after the disaster; however, funding from the State and FEMA will not follow so quickly.

To get started in its recovery efforts, a jurisdiction must be knowledgeable about the state and federal reimbursement programs and the process for requesting funding. This chapter also provides guidelines for receiving reimbursement for recycling programs even if they are not "least cost" as is FEMA's policy.

CHAPTER 7 MUTUAL AID

Statewide system:

Because California's disaster planning is based on a statewide system of mutual aid, this will be one of the first options a jurisdiction will use to get additional staffing and equipment.

Each local jurisdiction relies first on its own resources, then calls for assistance:

- ◆ city to city,
- ◆ city to county,
- ◆ county to county, and
- ◆ county to the regional office of the Office of Emergency Services, which relays the request to the State.

This chapter provides an overview of the different mutual aid agreements that a jurisdiction can develop or become a signatory to:

- ◆ Public Works Mutual Aid;
- ◆ Public Information Officers Mutual Aid; and
- ◆ Emergency Managers Mutual Aid.

CHAPTER 8

CURBSIDE COLLECTION PROGRAM

Program type: One of the primary methods used by jurisdictions to remove material after a disaster is a curbside waste pickup program. Cities and counties implement curbside pickup programs to remove debris from the street after businesses and homeowners have placed the materials in front of the property.

Requirements: In any curbside pickup program, there are some basic requirements that need to be addressed and implemented. Following is a partial list of topics discussed in more detail in the Plan.

- ◆ processing and facility needs;
- ◆ labor and equipment needs;
- ◆ funding requirements;
- ◆ method of implementation;
- ◆ contract requirements;
- ◆ temporary storage requirements;
- ◆ public information strategy; and
- ◆ market requirements.

CHECKLIST

CHAPTER 8 CURBSIDE PICKUP PROGRAM

- ☐ **STEP 1:** Identify/quantify material.
- ☐ **STEP 2:** Determine processing and facility needs.
- ☐ **STEP 3:** Identify labor and equipment needs.
- ☐ **STEP 4:** Secure program funding in advance.
- ☐ **STEP 5:** Select method to locate curbside waste.
- ☐ **STEP 6:** Determine method of implementation.
- ☐ **STEP 7:** Identify temporary storage areas.
- ☐ **STEP 8:** Identify/establish markets for collected materials.
- ☐ **STEP 9:** Review contract requirements.
- ☐ **STEP 10:** Develop tracking/documentation system.
- ☐ **STEP 11:** Develop public information program/strategy.
- ☐ **STEP 12:** Develop methods to encourage diversion.
- ☐ **STEP 13:** Develop monitoring and enforcement program.
- ☐ **STEP 14:** Prepare final report.

CHAPTER 9

BUILDING DEMOLITION PROGRAM

Contents:

This chapter sets forth general guidelines for establishing a building demolition program, emphasizing diversion (reuse, recycling) of waste generated as a result of the demolition. The information presented here is taken primarily from the:

- ◆ City of Los Angeles' building demolition and debris removal program initiated after the 1994 Northridge earthquake, and the County of Humboldt's demolition program after the 1992 earthquake.
- ◆ These demolition programs are offered as examples of how two jurisdictions approached the task of setting up such a program.

Maximize diversion:

In addition, ideas on how to maximize diversion opportunities, and hints and policy actions undertaken by other jurisdictions after past disasters are offered to help others avoid common pitfalls in implementing a building demolition program.

Eligible work:

The planning phase is important in identifying the types of building demolition work eligible for federal public assistance demolition funding. This information in turn will help determine the types and scope of building demolition programs a jurisdiction may choose to undertake.

CHECKLIST

CHAPTER 9 BUILDING DEMOLITION PROGRAM

Planning Phase

- ☐ **Step 1:** Review Section 403, Essential Services, of the Stafford Act, to determine the types of building demolition work eligible for federal public assistance demolition funding.

Pre-Demolition Phase

- ☐ **Step 1:** Prepare demolition plan.
- ☐ **Step 2:** Identify affected properties.
- ☐ **Step 3:** Conduct historic preservation review.
- ☐ **Step 4:** Prepare video documentation.
- ☐ **Step 5:** Establish haul routes.
- ☐ **Step 6:** Obtain waivers and releases.
- ☐ **Step 7:** Prepare contract.
- ☐ **Step 8:** Select contractor(s).

Demolition Phase

- ☐ **Step 1:** Identify hazardous materials in damaged buildings.
- ☐ **Step 2:** Obtain proper permits.
- ☐ **Step 3:** Deploy field staff.
- ☐ **Step 4:** Notify residents and utilities of demolition schedule.

- ☐ **Step 5:** Remove hazardous materials.
- ☐ **Step 6:** Recycle demolition debris.
- ☐ **Step 7:** Develop a plan to handle special wastes.
- ☐ **Step 8:** Demolish building.
- ☐ **Step 9:** Remove, transport, dispose of remaining debris.

Post-Demolition Phase (Closing Project)

- ☐ **STEP 10:** Issue reports as required by City.
- ☐ **STEP 11:** Inspect properties.
- ☐ **STEP 12:** Videotape and photograph the completed site and area, by lot.
- ☐ **STEP 13:** Maintain contract records.
- ☐ **STEP 14:** Complete processing of claims for funding and project close out.
- ☐ **STEP 15:** Participate on an as-required basis in the negotiations of settlement of claims.

CHAPTER 10

HOUSEHOLD HAZARDOUS WASTE AND DISASTER PLANNING

- Purpose:** The purpose of this chapter is to provide assistance to local jurisdictions in developing a disaster plan for the collection of household hazardous wastes (HHW). The purpose of disaster planning for HHW is to minimize potential public health and safety impacts, as well as to minimize costs and confusion.
- While many local jurisdictions already have comprehensive collection programs for HHW, these programs may need to be modified to allow the program to operate adequately during a disaster. A good disaster plan can help meet these needs.
- Coordinate plan:** For cities that participate in a county collection program, a disaster plan should be developed in conjunction with the county. In addition, a disaster plan should be developed in consultation with the following:
- ◆ local/regional emergency management agencies,
 - ◆ fire departments,
 - ◆ police, and
 - ◆ other local entities that may be involved in disaster and/or HHW collection programs.
- Focus is HHW:** While some of the information contained in this chapter may apply to hazardous materials emergency response, the focus of this chapter is on household hazardous waste collection programs.

CHECKLIST

CHAPTER 10 HOUSEHOLD HAZARDOUS WASTE COLLECTION PROGRAM

Develop household hazardous waste (HHW) collection program disaster plan.

- ☐ **STEP 1:** Describe existing HHW collection program.
- ☐ **STEP 2:** Designate a Local HHW disaster coordinator.
- ☐ **STEP 3:** Develop lists for local and emergency personnel.
- ☐ **STEP 4:** Enter into Mutual Aid Agreements.
- ☐ **STEP 5:** Identify potential collection sites and equipment.
- ☐ **STEP 6:** Prepare contractor/hauler agreements.
- ☐ **STEP 7:** Assess need for special Household Hazardous Waste Collection events.
- ☐ **STEP 8:** Provide public information/notification.
- ☐ **STEP 9:** Establish or expand load checking programs.
- ☐ **STEP 10:** Apply for State Household Hazardous Waste permits.
- ☐ **STEP 11:** Apply for State and Federal assistance/funds.
- ☐ **STEP 12:** Document costs, quantities, and types of Household Hazardous Waste collected.

Establish a household hazardous waste collection program.

- ☐ **STEP 1:** Define roles and responsibilities.
- ☐ **STEP 2:** Establish a planning committee.
- ☐ **STEP 3:** Establish goals.
- ☐ **STEP 4:** Determine funding availability.
- ☐ **STEP 5:** Decide who the program participants will be.
- ☐ **STEP 6:** Gather information about HHW laws and regulations, types and quantities of HHW that may be collected.
- ☐ **STEP 7:** Gather information about other jurisdictions' HHW programs.
- ☐ **STEP 8:** Generate public involvement.
- ☐ **STEP 9:** Establish waste acceptance criteria.
- ☐ **STEP 10:** Select type of collection program.
- ☐ **STEP 11:** Select HHW contractor/hauler.
- ☐ **STEP 12:** Develop a site operation plan.
- ☐ **STEP 13:** Develop a health and safety plan.
- ☐ **STEP 14:** Develop an emergency response plan.
- ☐ **STEP 15:** Establish segregation and sorting protocols.
- ☐ **STEP 16:** Establish reuse/recycling program

CHAPTER 11

PUBLIC INFORMATION PROGRAM

Background:

The success of a diversion program lies with the effectiveness of its public information or outreach program. An effective public information program will realize two goals:

- ◆ provide adequate advertisement of the debris collection program, as well as
- ◆ educate the residents and contractors involved in carrying out the program.

Unless this program is taken seriously and resources applied to implement it, plans to recycle and otherwise divert the disaster debris may go unrealized.

Good communication is paramount to achieving coordination and consistency within a jurisdiction's various departments and with the state and federal agencies assisting in the disaster recovery. As such, elevating the importance of the public information function will assist the debris manager in carrying out the selected diversion programs and in accomplishing the program goals.

CHECKLIST

CHAPTER 11 PUBLIC INFORMATION PROGRAM

- ☐ **STEP 1:** Establish a public information or media center to handle debris management questions from the public.
- ☐ **STEP 2:** Develop contact lists for the media.
- ☐ **STEP 3:** Set up a hotline for the public to call regarding debris management programs and/or for debris pickup.
- ☐ **STEP 4:** Coordinate jurisdiction's outreach materials for debris management program with jurisdiction's Public Information Officer and Office of Emergency Services.
- ☐ **STEP 5:** Advertise recycling and diversion programs.
- ☐ **STEP 6:** Identify all target groups.
- ☐ **STEP 7:** Determine need for interpreters and translators.
- ☐ **STEP 8:** Provide fact sheets to the public.
- ☐ **STEP 9:** Develop public information campaign.
- ☐ **STEP 10:** Develop a Public Information Mutual Aid Plan.

CHAPTER 12

REBUILDING USING RECYCLED-CONTENT PRODUCTS

Background:

After the disaster recovery is well underway, residents and businesses will begin rebuilding. Rebuilding includes two aspects that are important for disaster planning:

- ◆ selecting recycled-content products (RCPs) for building, and
- ◆ separating materials at the construction jobsite to maximize recovery.

Products:

The key to diverting construction and demolition (C&D) debris is to promote products using the debris as feedstock. Recycled-content construction products are discussed in two categories:

- ◆ inerts, and
- ◆ general building products.

Suggested actions:

This chapter presents the following lists of actions to:

- ◆ promote recycled-content products with public works personnel;
- ◆ encourage RCP selection;
- ◆ assist manufacturers with financing or assistance with permits if they are expanding or in start-up phase; and
- ◆ encourage separation and recycling of construction waste at new construction sites.

Also included are sources of information on construction-related RCPs.

CHAPTER 13

STANDARDIZED EMERGENCY MANAGEMENT SYSTEM

Background:

As a result of the 1991 East Bay Hills Fire in Oakland, Senate Bill 1841 was passed by the Legislature and made effective 1/1/93. The law is found in Section 8607 of the California Government Code. The intent of this law is to improve the coordination of state and local emergency response in California. The Standardized Emergency Management System (SEMS) regulations took effect in September of 1994.

The use of SEMS is required for state response agencies. Local government agencies must use SEMS if they are to receive state funding for extraordinary response personnel costs resulting from a disaster.

Five levels:

SEMS consists of five organizational levels which are activated as necessary:

- ◆ field response;
- ◆ local government;
- ◆ operational area;
- ◆ regional; and
- ◆ state.

This chapter discusses the five SEMS organizational/ response levels and their place in the overall emergency response system.

CHAPTER 14

EMERGENCY AND DISASTER DECLARATION PROCESS

- Process:** The process to request state and/or federal assistance after a disaster or emergency is initiated when the local governing body or Governor submits a formal request to the appropriate state or federal office.
- Assistance:** Program and financial assistance will vary depending on:
- ◆ the type of declaration or proclamation declared;
 - ◆ whether the situation constitutes an emergency or a disaster; and
 - ◆ the assistance required.
- Topics:** This chapter covers the declaration of a local emergency, funding for the NDAA program, and the assistance available with a Governor's Proclamation of a State of Emergency.

CHAPTER 15

STATE NATURAL DISASTER ASSISTANCE (NDAA) PROGRAM

Background:

The Natural Disaster Assistance Act (NDAA) is activated after:

- ◆ a local declaration of emergency;,,
- ◆ Governor's Proclamation of a State Emergency; or
- ◆ a Presidential Declaration of a Major Disaster or Emergency.

Once the NDAA is activated, local government is eligible for certain types of assistance, depending upon the specific declaration or proclamation issued. This chapter outlines the types of assistance available and the application procedure for requesting that assistance.

CHAPTER 16

FEDERAL PUBLIC ASSISTANCE PROGRAM

Background:

It is the responsibility of the local communities and the State to respond when a natural disaster occurs; however, the results of the disaster may overwhelm their combined efforts to effectively handle the recovery. In these instances, the State can request federal assistance to supplement the state and local efforts.

This chapter provides an overview of federal assistance available under the Robert T. Stafford Disaster Relief and Emergency Assistance Act and the Federal Response Plan.

CHAPTER 17 CASE STUDIES

Three case studies:

Three case studies are included in this Plan -- the 1991 Oakland Firestorm, and the City of Los Angeles and the City of Santa Clarita responses to the 1994 Northridge earthquake. The case studies examine how each city established diversion programs to handle the disaster debris generated within their communities and offer some lessons learned and planning guidelines for future events.

This information is presented in the hope that other jurisdictions can learn from these cities' experiences and incorporate these suggestions into their own pre-disaster plans by maximizing water diversion efforts and utilizing existing resources to the greatest benefit.

CHAPTER 1

GOVERNMENT COORDINATION

Background:

The key to organizing an immediate and effective recovery program after a disaster is government coordination, both internal and external.

It is important to identify how you/your department fits into the "big picture" of emergency response and recovery.

Principal points to cover include identifying:

- ◆ how your jurisdiction will respond in a particular disaster;
- ◆ who should be involved from your agency;
- ◆ how resources will be coordinated;
- ◆ the local, state, and federal agencies involved in the recovery process; and
- ◆ the process to follow in requesting state and federal assistance.

Knowing these things in advance will save valuable time in establishing programs to handle the influx of disaster debris that is inevitable with major disasters.

Contents:

The four steps to take in setting up your emergency organization and establishing contacts with the appropriate local, state, and federal agencies involved in disaster debris management are outlined below:

Contents:

STEP	ACTION	PAGE
1	Define intradepartmental relationships, designate a debris manager, and establish a debris "team."	1-3
	Debris team	1-3
	Mutual Aid	1-5
	Table: Departments and Functions Represented in the Recovery Process	1-7
2	Outline and evaluate the potential for particular disaster event, and develop functional checklists for each likely disaster.	1-10
3	Become familiar with emergency response plans, procedures and the Standardized Emergency Management System.	1-12
	Table: Flow of requests for assistance	1-12
	Emergency Planning	1-15
	Local Emergency Response Plan	1-16
	State Emergency Plan	1-17
	Federal Response Plan	1-18
	SEMS Training	1-18
	Emergency Response Procedures	1-19
4	Identify local, state, and federal agencies involved in disaster debris management.	1-20
	Local Responsibilities	1-20
	Local Enforcement Agency	1-21
	Emergency waiver of standards regulations	1-22
	State Agency Responsibilities	1-23
	Federal Agency Responsibilities	1-25

☐ **STEP 1: DEFINE INTRADEPARTMENTAL RELATIONSHIPS, DESIGNATE A DEBRIS MANAGER, AND ESTABLISH A DEBRIS "TEAM"**

Identify teams:

Identify the key players in your organization, by position, who will have some responsibility for developing and implementing a debris management program. Identify those who will be on your "Team" and define their roles accordingly.

Work with the person in your jurisdiction who will be responsible for coordinating the overall disaster response so that the debris management functions are integrated into the overall disaster response and recovery.

Coordinate with other "teams," particularly with whomever is in charge of communication and information.

Debris team:

It is important to identify beforehand all those entities that are needed to coordinate and implement a diversion program.

Typically, the Solid Waste Planning Department, Public Works Department, and the Local Enforcement Agency represent the three areas with the most direct responsibility in:

- ◆ establishing diversion programs;
- ◆ removing or temporarily storing disaster-related debris; and
- ◆ coordinating the enforcement and permitting of solid waste facilities and operations respectively.

Example: While the **Solid Waste Planning Department** may develop a debris diversion program, it may be the **Public Works Department** that writes the contract to implement the program or the **Local Enforcement Agency** that can provide guidance in establishing a temporary storage or processing site. Unless there is internal coordination, the diversion program may not be implemented.

"Core" team:

The complete listing of those staff who could be involved in a disaster recovery program are listed in the table on pages 6-9. Of these staff, some will devote their time solely to debris management programs. Keep in mind that your core team will be comprised of these staff, but that other staffing will be needed for the other support functions not directly related to recycling or debris management programs.

City/County OES:

The city/county Office of Emergency Services (OES) contact is a critical member of the "Team." This person could be a member of the Fire Department, the Sheriff's Department, or the city/county OES office, depending on your jurisdiction's organization.

Develop a working relationship with this person now as he/she can you help work within the emergency response system before and after a disaster and also help in developing your requests for debris management assistance.

More importantly, contact the city/county OES (or emergency services department) to receive information on Standardized Emergency Management System (SEMS) training for field, management, and executive staff who may be involved in emergency response activities.

Define roles:

Each member's role within the group must be established and reporting relationships made explicit. This is especially important if someone is lead for staff who would in normal circumstances be subordinate to those supervised.

Assign management responsibilities so that it is clear who is in charge and has the responsibility for making final decisions.

Assignments and responsibilities should be given before a disaster occurs so that specific staff members understand their roles and responsibilities beforehand.

Communication:

With a number of teams or groups working independently yet in concert during the recovery process, it is critical to clearly establish the responsibility for the coordination and dissemination of information. This is important so that timely

and consistent information is released to the general public, contractors, and the recovery workers.

There should be one spokesperson who represents the organization and speaks on its behalf and one office (typically the public information office) through which all communication is directed. Institute a process whereby information is shared with all teams directing the disaster recovery. Refer to Chapter 11, Public Information, for more detail.

Mutual aid:

If an agency's resources are overwhelmed by a disaster, it is possible that neighboring jurisdictions can loan staff to assist in the recovery, provided they are not affected by the disaster.

EMMA¹: The **Emergency Managers Mutual Aid** (EMMA) program administered by State OES may also be an option. The purpose of EMMA is to provide professional emergency management personnel in the form of mutual aid to impacted areas to support disaster operations.

Examples: Solid waste planner to act as technical advisor to assist in establishing a debris management program.

Public works staff members to assist in implementing debris management program, such as training field staff in proper procedure of source separation and debris collection to ensure materials can be recycled or reused.

Financial and accounting staff members to set up tracking/accounting system for disaster-related costs to ensure FEMA reimbursement.

Program structure:

In response to the Northridge Earthquake, the City of Los Angeles' Department of Public Works implemented an earthquake debris removal program. This program was led by the Bureau of Engineering, with support from the Bureau of Contract Administration, which provided field monitoring of contractors, and the Bureau of Sanitation, Integrated Solid

Waste Management Office, which directed the recycling component.

Engineering organization: Within the Bureau of Engineering, the Northridge Earthquake Recovery Division was created. Staff from various Divisions within the Bureau were assigned to the new ad hoc division and assumed responsibilities for different aspects of the earthquake recovery. After the work was completed, the Division was subsequently disbanded.

Advantages: This aided in coordinating all earthquake-related activities and simplified billing for debris-related costs since the City could document that all activities performed by this Division were earthquake related and therefore reimbursable by FEMA.

Table:

The table below lists by function those departments typically involved in the overall recovery process. Each department is equally important in the process, since various functions are dependent upon one another.

Source: This table was modified from the OES Earthquake Recovery and Reconstruction Guidelines for Local Government, Southern California Earthquake Preparedness Project, California OES, 1991, to include solid waste functions.

Note: Disaster debris management activities are but one part of the overall recovery process. Consequently, it is important to understand the recovery process, how debris management fits into the bigger picture and relates to the other recovery functions, and how state and federal assistance should be requested.

Departments and Functions Represented in Recovery Process

AGENCY	FUNCTION
Chief Administrative Officer, City Manager	<ul style="list-style-type: none"> • political process management; • interdepartmental coordination; • policy development; • decisionmaking.
Planning or Public Works	<ul style="list-style-type: none"> • land use; • zoning; • variances; • permits and controls for new development; environmental review. • designation of temporary storage sites; environmental assessment; arranging for use of sites.
Building and Safety, Public Works, Fire Marshal, Health	<ul style="list-style-type: none"> • building regulation; • inspection and demolition; • code enforcement; • plan review; • construction permits. • contract preparation for building demolition; issuance of construction permits with diversion clause.
Treasurer, Controller, Purchasing Agent, Risk Management, Assessor, Finance Management, Public Works, Chief Administrative Officer, Accounting	<ul style="list-style-type: none"> • public finance; • budgeting; • contracting; • accounting and claims processing; • taxation; • insurance settlements. • Process Damage Survey Reports. • Track expenditure impact of post-disaster labor and materials. • Issue and monitor accounting procedures required to track disaster related overtime and other unusual expenditures.
Emergency Services	<ul style="list-style-type: none"> • requests for disaster assistance and liaison with providers; • on-site support; • claims and project application management. • preparation of documentation for FEMA approval of diversion programs.
Legal Staff	<ul style="list-style-type: none"> • advice on emergency authorities and actions;

Government Coordination

AGENCY	FUNCTION
	<ul style="list-style-type: none"> • preparation of opinions; • preparation of new ordinances, and regulations. • For example, ordinance for temporary storage sites; emergency authority for staff to execute contracts on behalf of governing body.
Public Works; Street, Water, Power, Sewage, sanitary and similar departments	<ul style="list-style-type: none"> • restoration of community utilities services, streets, sewage and solid waste disposal and similar locally operated functions; • road clearing operations, ensure resumption of operation at solid waste and recycling facilities. • Maintain clear access to SW facilities. • Maintain and protect stationary and mechanical equipment.
General Services, Procurement, Personnel, Administrative Services, Information Services	<ul style="list-style-type: none"> • government operations and communications • space; • supplies and equipment; • vehicles; • personnel; • related support, including necessary contracts. • (Arrange for personnel to assist in recovery; write contracts for CCC/EDD personnel for debris removal; arrange logistics for CCC) • post-disaster geographic information system (GIS) responsibilities to include mapping of diversion/disposal sites, • debris pickup status, • provide information to Public Information Officer for Public Service Announcements.
Public Information Office	<ul style="list-style-type: none"> • Inform the public through all media as to disruption and resumption of waste collection services and recycling facility accessibility. • Educate public through media of emergency practices to be undertaken by households in facilitating special diversion/recycling programs. • Act as the principal spokesperson for the organization. Establish one office through which all communication is directed. In charge of rumor control. • Issue timely and consistent information to the general public, media, recovery workers, and contractors.

Government Coordination

AGENCY	FUNCTION
Local Enforcement Agency; Solid Waste Management Department; Community Planning; Environmental Health Services; Recycling Services	<ul style="list-style-type: none">• Assist in technical construction and siting of facilities for emergency storage/processing of solid waste.• Secure construction sites and arrangements with contractors at solid waste facilities.• Assist in assessing post-disaster damage to facilities.• Contribute technical expertise in siting and operation of facilities for emergency storage/processing of solid waste.• Identify recycling, reuse and disposal sites.• Identify possible storage areas at existing solid waste facilities; at other publicly or privately owned property.• Identify permits required under state requirements, local requirements.• Determine environmental controls needed; develop monitoring program.• Develop plan to assist property owners in cleanup.• Develop diversion or recycling program.• Contact haulers, brokers, processors for disaster debris.
Recycling Market Development Zone Coordinator	<ul style="list-style-type: none">• Help identify markets for collected disaster debris.• Contact/set up waste exchange
Household Hazardous Waste Coordinator	<ul style="list-style-type: none">• Develop or coordinate HHW program.

☐ **STEP 2: OUTLINE AND EVALUATE POTENTIAL DISASTER EVENTS AND DEVELOP CHECKLISTS FOR EACH LIKELY DISASTER²**

Agency actions: Describe the jurisdiction's primary actions for each identified disaster event. The role of each element of the organization should be explained briefly. In doing this, it should become clear which other functions are needed to respond to a disaster and which agency is responsible for those functions. This is the beginning of the establishment of an emergency organization, or debris team, to deal with disaster debris.

Checklists: **Develop functional checklists for each likely disaster.** Checklists should be accompanied by a listing of resources, directories, contacts, and other information essential to responding to disasters. In addition to a jurisdiction's resources, include a directory of similar resources available from other local/state/federal agencies³.

Following are some useful checklists to consider:

- ◆ Alert lists, including a roster of executive and emergency management staff. Include home and office numbers, which should be kept confidential.
- ◆ Equipment and supply summaries, including a brief description of type of equipment, amount of supplies available, and location.
- ◆ Directories of field and regional locations, including personnel assigned and a brief listing of available equipment and supplies.
- ◆ List of private sector supplies and equipment that can augment or substitute for agency resources.
- ◆ Media listings including television, radio, print, media, and wire services.
- ◆ Any maps, charts, and diagrams of potential use to agency staff during disaster response.

A good example is a map of major transportation corridors. If these are damaged or impassable, it is critical to have a contingency plan so that emergency vehicles can respond on established routes to clear roadways and remove debris.

Also, if the roads to the recycling and/or disposal facilities are blocked, it is imperative to have contingency routes or facilities available to speed up the disaster cleanup.

☐ **STEP 3: BECOME FAMILIAR WITH EMERGENCY RESPONSE PLANS AND PROCEDURES AND SEMS**

Identify role: Become familiar with emergency response plans and procedures and plan disaster response accordingly. A county or local Office of Emergency Services office will most likely be responsible for developing and maintaining the jurisdiction's emergency response plan and may provide training to the jurisdiction's staff on emergency response procedures. Contact the local OES staff first to see whether the local emergency plan addresses debris management and to identify staff responsibilities.

Emergency operations: Also become familiar with local responsibilities for emergency management operations. Your local OES staff may be able to provide training and exercises in emergency response procedures in accordance with the Standardized Emergency Management System.

Requests for assistance: The table below shows how the requests for assistance begin at the local level and go up the chain of command (in concert with SEMS) to the federal government. The example used below is for a major area-wide disaster with damage in multiple operational areas (counties). Other scenarios will vary.

	AGENCY	RESPONSIBILITIES⁴
1	EMERGENCY EVENT/DISASTER	
2	INCIDENT COMMAND POST (ICP) field level	<ul style="list-style-type: none"> • Field units from the affected jurisdictions respond as feasible using the Incident Command System. • Incident Command Posts may be established at various sites throughout the disaster area. • Resources are requested through dispatch centers, department operations centers, or emergency operation centers (EOC).
3	DEPARTMENT OPERATIONS CENTER (DOC)	In some cases, a jurisdiction may establish a Department Operations Center (DOC). This is a facility used as an EOC by a distinct discipline or agency, such as flood operations, fire, medical, hazardous materials, Department of Public Works, or Department of Health. The DOC operates within local

Government Coordination

	AGENCY	RESPONSIBILITIES⁴
	local government level	<p>government but is a satellite EOC.</p> <ul style="list-style-type: none"> • The DOC is the location from which centralized management of that discipline's or agency's emergency response is performed. • The DOC must have a communications mechanism to the EOC so that it does not operate independently.
4	EMERGENCY OPERATIONS CENTER (EOC) local government level	<p>This includes those facilities used by municipalities and special districts. Local government EOCs will coordinate activities among departments.</p> <ul style="list-style-type: none"> • Local government supports Incident Commanders with available resources • Local government activates its EOC and notifies the Operational area (OA) lead agency. • Resources are requested through OA emergency management staff and mutual aid coordinators. • Local government retains responsibility for managing the response.
5	OPERATIONAL AREA (County)	<p>The facility which coordinates the delivery of requested resources from among local governments within the operational area (county) and also serves as the communication link between the local government level and the regional level.</p> <ul style="list-style-type: none"> • Lead agency activates OA emergency operations center. • OA emergency management staff and mutual aid coordinators locate and mobilize resources requested by local government. • Resources not available within the OA are requested through the OES Regional Administrator and regional mutual aid coordinators.
6	REGION (REOC)	<p>There are three Regional EOCs that support and coordinate a variety of Office of Emergency Services services within mutual aid regions. They are:</p> <ul style="list-style-type: none"> • Coastal Region - Oakland; • Southern Region - Los Alamitos; and • Inland Region - Sacramento <p>OES Regions provide services to operational areas (counties) and local governments (see Attachment A for Regional EOC</p>

	AGENCY	RESPONSIBILITIES ⁴
		<p>locations).</p> <ul style="list-style-type: none"> • OES Regional Administrator activates REOC (Regional Emergency Operations Center) and notifies OES headquarters. • OES Regional Administrator and regional mutual aid coordinators locate and mobilize resources available within the region and from state agencies. • Additional resources are requested through the SOC. • State agency representatives are requested for the REOC to assist in coordinating support to the disaster area. • REOC monitors situation and updates State Operational Center.
7	STATE (SOC)	<p>State OES will activate and operate a State Level EOC during periods of emergencies and disasters.</p> <ul style="list-style-type: none"> • SOC is activated and state agency representatives are requested to staff the SOC. • SOC coordinates state agency response and mobilization of mutual aid resources from unaffected regions. • SOC may direct activation of other OES REOCs to assist in resource mobilization. • State agency department operations centers are activated. • Federal assistance is requested, if needed. • SOC continuously monitors situation
8	FEDERAL FEMA	<ul style="list-style-type: none"> • Activates and implements the Federal Response Plan (FRP) upon the Presidential Declaration of a Major Emergency or Disaster. The Presidential declaration makes federal resources available to the affected areas.

Emergency planning

Five levels: There are five levels of California SEMS emergency planning:

- ◆ field,
- ◆ local government,
- ◆ operational area,
- ◆ regional, and
- ◆ state.

Government Coordination

The planning documents for each level are listed below, followed by the Federal Response Plan.

Planning Levels	Planning Documents
Field response	<ul style="list-style-type: none">• Incident Action Plan
Local Government	<ul style="list-style-type: none">• Multi-hazard Functional Plan
Operational Area	<ul style="list-style-type: none">• Operational Area Plan/Emergency Operations Center Procedures <p>(The county, city or special district may serve as the Operational Area Emergency Operations Center).</p>
Regional	<ul style="list-style-type: none">• State Emergency Plan/Regional Emergency Operations Center Procedures
State	<ul style="list-style-type: none">• State Emergency Plan/State Operations Center Procedures
Federal	<ul style="list-style-type: none">• Federal Response Plan

1. Local emergency response plan

Local level:

The local level of the emergency management system consists of the emergency management staff of cities and counties. The local Emergency Operations Center field response occurs at this level.

County staff are responsible for unincorporated areas within counties and may also function as the operational area emergency management staff. Each jurisdiction may act alone or with other jurisdictions.

Local plans

Local emergency plans are considered extensions of the California Emergency Plan. Many jurisdictions have used the Local Government Planning Guidance (formerly known as the Multi-hazard Functional Planning Guidance) as the basis for their emergency plan.

Local responsibilities

The Emergency Services Act provides a basis for local emergency management programs. Local ordinances and resolutions establish local responsibilities for emergency management operations.

Government Coordination

The responsibilities of local jurisdictions are outlined in the table below:

	Local Jurisdiction Responsibilities⁵
1	Identify all hazards that may pose a major threat to the jurisdiction.
2	Develop and maintain up-to-date emergency plans which are consistent with the State Emergency Plan and the California Master Mutual Aid Agreement.
3	Develop maps of areas within the jurisdiction which may be subject to disasters; for example, geologic hazards, floodplains, and areas below dams.
4	Develop plans for meeting all conditions which could constitute a local emergency. Such plans provide for the effective mobilization of all local resources, both public and private.
5	Develop a standard form available for use in requesting the Governor to proclaim a State of Emergency.
6	Provide OES with estimates of the severity and extent of damage resulting from a disaster, including dollar value of both public and private damage sustained as well as estimates of resource costs required to alleviate the situation

2. State Emergency Plan⁶

What it is: The State Emergency Plan (SEP) describes the organization, agencies, and responsibilities of the emergency management system. The SEP identifies mutual aid resources provided by state, local, and federal agencies, and the private sector. It also summarizes the emergency responsibilities of state agencies.

Authority: The California Emergency Services Act (ESA) establishes the authority for conducting emergency operations following the proclamation of an emergency by the Governor, or an emergency proclamation by a local jurisdiction.

State OES: The Office of Emergency Services (OES) is part of the Governor's Office and performs executive functions assigned by the Governor. The OES Director is assisted by representatives from other state agencies. The OES Director coordinates the emergency activities of all state agencies during a state of war emergency, a state of emergency, or a local emergency.

3. Federal Response Plan⁷

Federal level:	When a disaster overwhelms the capabilities of state and local governments, they may request help from the federal government. The multi-agency disaster response program that helps states during and after a disaster is the Federal Response Plan (FRP).
How the FRP works:	The President may provide federal resources to the affected areas by declaring an emergency or disaster. Once the President has made such a declaration, the Federal Emergency Management Agency (FEMA) is responsible for activating and implementing the FRP.
Resources:	The Federal Response Plan groups federal assistance into 12 functional areas called Emergency Support Functions or ESFs. These include fire fighting, transportation, health and medical services, public works, urban search and rescue, and others.

SEMS TRAINING⁸

Get trained:	<p>Receive training on the standardized emergency management system. Those involved in debris management should become an integral part of their jurisdiction's emergency response system in order to:</p> <ul style="list-style-type: none">♦ effectively coordinate the debris management response with the overall disaster response,♦ know how to request assistance through proper channels, and♦ obtain reimbursement for eligible disaster costs. <p>Emergency response is now based on the Standardized Emergency Management System described below. For more information, contact your local OES coordinator or the State OES Regional Office nearest you (see Attachment A for a listing of offices).</p>
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Purpose: As a result of the 1991 East Bay Hills fire in Oakland, Senate Bill 1841 was passed by the Legislature and regulations subsequently implemented in 9/94 that established the **Standardized Emergency Management System (SEMS)**. The intent of the law was to improve the coordination of state and local emergency response in California.

Framework: The framework of SEMS includes:

- ◆ the Incident Command System (ICS),
- ◆ multi-agency or inter-agency coordination,
- ◆ Master Mutual Aid Agreement and system, and
- ◆ the operational area concept.

ICS is the nationally used standardized emergency management system for field level response, commonly used by fire and law enforcement.

Must use SEMS: State agencies are mandated to use SEMS. Local jurisdictions, including special districts, must use SEMS in responding to emergencies and disasters in order to be reimbursed for eligible personnel-related costs under state disaster assistance programs.

EMERGENCY RESPONSE PROCEDURES⁹

Learn system: Become familiar with your agency's emergency response procedures and coordinate the disaster debris response accordingly. Typically the emergency response will be coordinated at the department, city, or regional level.

EOC: In general, the Emergency Operations Center (EOC) is the facility used to coordinate the overall jurisdictional response and support to an emergency.

DOC: Is a Department Emergency Operations Center which supports the jurisdiction's EOC and specific field operations.

If a Department Operations Center (DOC), or the jurisdiction's Emergency Operations Center (EOC) is activated, determine who from the

Government Coordination

agency is the designated representative and coordinate requests for debris management and clearance assistance to the DOC or EOC through the appropriate channels.

Additional information:

For additional information on disaster assistance and debris management guidelines, review the **regulations governing disaster assistance** (Attachment B) and the federal **Debris Removal Guidelines** (Attachment C).

☐ **STEP 4: IDENTIFY LOCAL, STATE, FEDERAL AGENCIES INVOLVED IN DISASTER DEBRIS MANAGEMENT**

Identify agencies: Identify relationships, as appropriate, with other governmental entities that may have a role in your debris management strategy.

Local Responsibilities

Local agencies: The primary local agencies that will be involved in a disaster response will vary depending upon the type and severity of the emergency or disaster. In general, those agencies that could be involved in a debris management strategy include the following:

- ◆ Public Works Department;
- ◆ Solid Waste or Integrated Waste Management Department;
- ◆ Building Department;
- ◆ Environmental Services Department (Household Hazardous Waste Program);
- ◆ Fire Department;
- ◆ Public Information Office;
- ◆ Local Enforcement Agency; and
- ◆ Recycling Market Development Zone.

Local Enforcement Agency

Role: Because the **Local Enforcement Agency's** role is particularly important in debris management, this group is highlighted here. (See Attachment D for a listing of Local Enforcement Agencies).

LEAs are the local government's designated agencies charged with enforcing the State's solid waste environmental and public health laws and requirements at the local level. Organizationally, they are typically found in county or city health or environmental health departments. LEAs must meet certain qualifications and be certified by California Integrated Waste Management Board (CIWMB).

Primary The LEAs' *primary responsibilities* under the CIWMB's

responsibilities:	auspices relate to the enforcement of the state's minimum standards at, and the permitting, if necessary, of the solid waste facilities and operations.
Enforces SWFP conditions:	The LEA enforces the conditions of the solid waste facilities permit, which will have a bearing on the establishment of temporary storage areas for disaster debris at such facilities and for implementation of diversion programs as they impact facility operations.
Inspections:	The LEA performs inspections of the facilities and writes and issues permits to operate them. In addition, the LEA may exempt certain types of facilities from the requirement to obtain a permit. LEAs also may inspect waste hauling vehicles under the Public Resources Code authority.
Public health:	LEA personnel also perform other tasks related to public health and the environment in their jurisdiction, although not associated with the CIWMB, such as the regulation of hazardous materials, medical waste, restaurant sanitation, pool maintenance, septic tank inspections, etc.
Consult early:	Local jurisdictions should consult with their LEA early in the planning process and immediately following a disaster to coordinate a diversion strategy. LEAs can play several key roles in developing a waste diversion strategy; however, most of these roles would fall under authority granted by local government, not the CIWMB.
LEA's role:	<p>The LEA can provide the following services:</p> <ul style="list-style-type: none">◆ identify recycling, reuse, and disposal sites. LEAs will know the location of existing disposal sites, as well as many or all recycling facilities, within their jurisdictions;◆ identify possible storage areas at existing solid waste facilities;◆ determine the environmental controls needed at selected temporary sites;◆ provide input into the contractual conditions that should be placed into a cleanup contract;

- ◆ assist in developing the plan to assist property owners in cleaning up;
- ◆ regulate asbestos use [Department of Toxic Substances Control (DTSC) jurisdiction. This could also fall under the Air Resources Board's jurisdiction, or OSHA's, depending on whether the asbestos is being disposed of or ground up]; and
- ◆ regulate lead (primarily lead-based paint on wood and metal) and household hazardous waste (DTSC jurisdiction).

Emergency waiver of standards regulations:

In addition, the Board's emergency waiver of standards regulations allow LEAs to issue emergency waivers to solid waste facility operators upon request in the event of a state of emergency or local emergency. The regulations are found in California Code of Regulations, Title 14, Division 7, Chapter 3, Article 3, sections 17210 through 17210.9. The waiver grants an operator temporary relief from specific state minimum solid waste standards or terms or conditions of the operator's solid waste facilities permit.

The waiver applies to the following:

- ◆ origin of waste;
- ◆ the rate of inflow for storage, transfer, or disposal of waste;
- ◆ the type and moisture content of solid waste;
- ◆ the hours of facility operation; and
- ◆ the storage time before transfer or disposal of wastes, at a solid waste facility.

A waiver can also be granted to an operator for the establishment of a locally-approved temporary transfer or processing site, if authorized by the local enforcement agency.

State Agency Responsibilities¹⁰

Source:

The following information is taken from Annex J, Construction and Engineering Operations, of the State Emergency Plan, 1988.

Purpose:

Annex J does the following:

- ◆ describes construction and engineering operations
- ◆ establishes policies and procedures for emergencies, and
- ◆ provides information on essential activities such as post-event inspection of facilities and structures, emergency debris clearance, and route recovery.

Responsibilities:

Because debris management activities will most likely be carried out by the Public Works Department or Building Department in a jurisdiction, following is a list of state agencies responsible for supporting local public works operations:

Government Coordination

State Agency	Functions
Office of Emergency Services	<ul style="list-style-type: none"> • Coordinates debris clearance performed by state agencies. • Receives, processes, forwards, and guides local jurisdictions and state agencies applying for federal emergency debris clearance grants. • Provides practical liaison with all water, gas, and electrical utilities within the state. • Assists with coordination of Mutual Aid.
California Conservation Corps (CCC)	<ul style="list-style-type: none"> • Provides personnel and equipment to clear debris. • Provides work crews to fight floods and help in related operations.
Department of General Services (DGS)	<ul style="list-style-type: none"> • Contacts construction materials manufacturers, wholesalers, and general contractors having construction-related equipment available for emergency operations. • Clears debris from State-owned buildings, sewers, and water systems. • Coordinates with professional engineering organizations and OES in recruiting, orienting, and training volunteer structural engineers.
Military Department	<ul style="list-style-type: none"> • Helps clear debris from roadways, bridges, and other essential facilities.
Integrated Waste Management Board	<ul style="list-style-type: none"> • Provides information on operational status of landfills; disaster debris diversion programs; construction and demolition (C&D) materials recycling; market reports for C&D materials; list of waste exchanges and C&D recyclers.
Department of Transportation (CalTrans)	<ul style="list-style-type: none"> • Helps DGS contact construction materials manufacturers and wholesalers and general contractors having construction-related equipment for use in emergency operations. • Assess state highway damage and establishes route recovery priorities.
Department of Water Resources (DWR)	<ul style="list-style-type: none"> • Helps DGS contact construction materials manufacturers and wholesalers and general contractors having construction-related equipment for use in emergency operations. • Assess state government highway damage and establishes route recovery priorities. • Provides flood protection, flood control, flood fighting services and related support.

Federal Agency Responsibilities¹¹

Federal Response Plan:

The Federal Response Plan groups federal assistance into 12 functional areas called Emergency Support Functions or ESFs.

These include fire fighting, transportation, health and medical services, public works, urban search and rescue, and others.

Each ESF is headed by a primary agency, selected for its statutory authorities, resources, and capabilities in the particular functional area. Other agencies are designated as support agencies for one or more ESFs.

Government Coordination

ESF	Function	Primary Agency
ESF 1	Transportation	Department of Transportation
ESF 2	Communications	National Communications System
ESF 3	Public Works and Engineering	Army Corps of Engineers
ESF 4	Fire Fighting	Department of Agriculture -Forest Service
ESF 5	Information and Planning	Federal Emergency Management Agency
ESF 6	Mass Care	American Red Cross
ESF 7	Resource Support	General Services Administration
ESF 8	Health and Medical Services	Department of Health and Human Services
ESF 9	Urban Search and Rescue	Federal Emergency Management Agency
ESF 10	Hazardous Materials	Environmental Protection Agency
ESF 11	Food	Department of Agriculture
ESF 12	Energy	Department of Energy

ATTACHMENTS

- A. List of OES Regional Offices.
- B. Regulations Governing Disaster Assistance.
- C. Federal Debris Removal Guidelines.
- D. List of Local Enforcement Agencies.

REFERENCES

- ◇ *State Agency Disaster Response Planning Guidelines, OES Planning Division, 1991.*
- ◇ *OES Earthquake Recovery and Reconstruction Guidelines for Local Government, SCEPP/California OES, 1991.*
- ◇ *SEMS Emergency Operations Center Course Materials, Module C5.*
- ◇ *SEMS Guidelines, Part I. System Description. A. General System Description.*
- ◇ *California State Emergency Plan, 1988.*
- ◇ *EPAs Role in the Federal Response Plan, 550-F-95-006 (brochure).*
- ◇ *Emergency Managers Mutual Aid Plan, draft, OES.*

ENDNOTES

Government Coordination

1. Emergency Managers Mutual Aid Plan, draft, Governor's Office of Emergency Services, 9/94.
2. State Agency Disaster Response Planning Guidelines, OES Planning Division, 1991.
3. Ibid.
4. SEMS Guidelines, Part I. System Description. A. General System Description, pages 14-15.
5. Ibid.
6. State Emergency Plan, Governor's Office of Emergency Services, 1988.
7. EPA's Role in the Federal Response Plan, 550-F-95-006, U.S. Environmental Protection Agency.
8. SEMS EOC Course Materials, Module 5, Governor's Office of Emergency Services. SEMS Guidelines, Part 1, System Description A., General System Description.
9. Ibid.
10. State Emergency Plan, Annex J, Construction and Engineering Operations, 1988.
11. EPA's Role in the Federal Response Plan, 550-f-95-006, U.S. Environmental Protection Agency.

CHECKLIST

CHAPTER 1 GOVERNMENT COORDINATION

- ☐ **STEP 1:** Define intradepartmental relationships, designate a debris manager, and establish a debris "team."
 - ◆ Designate a debris manager and establish a debris "team."
 - ◆ Identify key players responsible for debris management in local waste management and their place in the emergency organization.
 - ◆ Define roles of team members.
 - ◆ Establish a management structure.
 - ◆ Consider establishing a special engineering organization to handle debris management functions.
 - ◆ Coordinate debris management team with overall disaster recovery team.

- ☐ **STEP 2:** Outline and evaluate potential for specific disaster events and develop functional checklists for each.
 - ◆ Identify available resources and develop resource inventories.
 - ◆ Describe supporting facilities.
 - ◆ Develop standard operating procedures and checklists for each disaster.

- ☐ **STEP 3:** Become familiar with emergency response plans, procedures, and the Standardized Emergency Management System.
 - ◆ review local jurisdiction's emergency plan;
 - ◆ review State Emergency Plan;
 - ◆ review Federal Response Plan;
 - ◆ review CFR 44 (Code of Federal Regulations);
 - ◆ receive training on the Standardized Emergency Management System;
 - ◆ review regulations relating to state and federal disaster assistance; and
 - ◆ review federal Debris Removal Guidelines.

Checklist
Government Coordination



STEP 4: Identify local, state, and federal agencies involved in disaster debris management.

- ◆ Identify relationships with other governmental agencies that may have a role in your debris management strategy.
- ◆ Coordinate debris management activities with Local Enforcement Agency.
- ◆ Consult with solid waste facility operator(s) and Local Enforcement Agency on emergency waiver of standards regarding establishment of temporary storage or processing area.

CHAPTER 2

PRE-DISASTER ASSESSMENT

Background: Performing an assessment or inventory of your resources is the first step in determining your jurisdiction's preparedness to effectively handle debris generated after a disaster.

The purpose of this assessment is to identify the kind of debris management strategy needed and diversion programs to consider. It will also show the areas that need to be developed in order to prepare an effective disaster debris response.

More detailed information on specific diversion programs is contained in Chapter 3, Debris Management Programs.

Contents: This chapter contains 12 sections and is divided into steps one might follow to develop a debris management strategy.

STEP	SECTION	ASSESSMENT WILL PROVIDE	PAGE
1	Develop local checklists	overall resources (staffing, equipment) available and those needed; facilities, markets, and temporary storage sites available and those needed	2-3
2	Conduct a disaster event analysis and waste characterization analysis	types of disasters a jurisdiction is likely to encounter and its vulnerability to each; types and amounts of waste likely to be generated	2-5
3	Identify temporary storage sites	list of potential sites that can be used as a pre-staging area for debris until it is processed or transported	2-11
4	Identify end-uses and markets	markets, processing requirements, and types of facilities needed to handle the disaster wastestream	2-14
5	Identify facilities needed	recycling, reuse, and disposal facilities available and needed	2-21
6	Identify processing techniques and barriers	specific equipment and processing techniques based on materials to be processed and their end-uses	2-25

STEP	SECTION	ASSESSMENT WILL PROVIDE	PAGE
7	Identify processing equipment needs	specific equipment and processing techniques based on materials to be processed and their end-uses	2-28
8	Review funding options	funding options available to fund diversion and recovery programs until state and federal funding becomes available	2-30
9	Determine contract needs	type of contracts needed and contracting options	2-32
10	Review Mutual Aid Agreements	type of assistance available from neighboring jurisdictions; types of agreements to consider developing	2-34
11	Identify labor needs	estimate of the types of labor and equipment needed and options for securing them	2-37
12	Review local ordinances	ordinances that might affect planned diversion programs or those that could be enacted to help establish such programs	2-38

☐ **STEP 1: DEVELOP LOCAL CHECKLISTS**

Checklists: Developing checklists in advance of a disaster can save valuable time in establishing debris management programs as well as in directing the overall recovery operations.

These checklists will be specific to a jurisdiction's situation and will reflect the resources available and those that will be needed.

Primary checklists: The primary checklists that need to be developed are listed below. Some of these, however, are more applicable to the city or county emergency services staff. In this case, check with your city/county OES to see what has been developed.

The other checklists or resource inventories will probably be developed by the staff responsible for establishing the diversion program, i.e. the city/county Solid Waste or Recycling Coordinator. Much of this information can be developed as each step in the following assessment is completed .

EMERGENCY SERVICES AND RESPONSE

- ◆ Emergency Organization Alert List;
- ◆ Available resources: staffing, equipment;
- ◆ Local, state, federal agencies involved in disaster debris management (see chapter 1 on Government Coordination for examples);
- ◆ Non-profit organizations (e.g., American Red Cross, Salvation Army);
- ◆ Mutual Aid agreements;
- ◆ Equipment and supply summary, both public and private sectors;
- ◆ Directories of field and regional locations;
- ◆ Maps, charts, diagrams of transportation corridors; and
- ◆ List of TV, radio, wire services.

FACILITIES

- ◆ Recycling, reuse, and disposal facilities;
- ◆ Maps of transportation corridors to facilities and alternate routes.

MARKETS

- ◆ End-uses for generated materials;
- ◆ Markets for generated materials;
- ◆ Haulers/brokers/processors and materials, amounts they can handle;
- ◆ Construction and demolition (C&D) brokers/processors;
- ◆ RMDZ businesses/local and state government contacts;
- ◆ Waste exchanges (CALMAX and national exchange list) and/or local exchanges;
- ◆ C&D recyclers (use CIWMB's list and/or local lists);
- ◆ salvage yards; and
- ◆ non-profit organizations.

TEMPORARY STORAGE SITES

MUTUAL AID AGREEMENTS

CONTRACTS AND FRANCHISE AGREEMENTS

ORDINANCES

☐ **STEP 2: CONDUCT A DISASTER EVENT ANALYSIS AND WASTE CHARACTERIZATION ANALYSIS**

Purpose: Identify the types of disaster(s) your city/county is likely to encounter. Different disasters will generate different types and amounts of debris, which in turn will affect the selection of a diversion strategy.

For each disaster event, evaluate its potential severity and your community's vulnerability to such a disaster.

Actions to take:

- ◆ Identify disasters likely to occur.
- ◆ Analyze nature of disasters and jurisdiction's vulnerability to each.
- ◆ Estimate amount and types of wastes that could be generated.
- ◆ Estimate amount and types of waste that could be generated as a result of recovery phase.
- ◆ Estimate construction and demolition (C&D) disposal tonnage.
- ◆ Develop list of materials that could be included in a diversion program.

Disaster event table:

The table below gives a general idea of the types of materials typically generated after a particular disaster.

DISASTER EVENT ANALYSIS

Disaster Event	Damage	Materials Generated	Secondary Impacts
Urban Fires	Foundations; Chimneys; Burned Cars	Metals; Bricks; Concrete; Foundations; Charred lumber and wood; Sand bags; Plastic.	Houses on hills, erosion & large amounts of earth move downhill. Can be caused by firefighting efforts, heavy rains after fire, earthquake. Earth, trees, and boulders fall on other homes, creating more structure debris.
Wildfires	Firestorm through trees and brush without wind, leaves nothing. With wind may leave dead but standing trees. Foundations, chimneys, burned cars.	Metals; Bricks; Foundations; Concrete; Dirt; Downed trees; Charred lumber; and wood; Sandbags; Plastic.	Erosion problems (same as urban fires)
Floods Tsunami Dam failure	Damage to homes: lumber, wallboard, carpets, furniture. (Mud) sediments deposited on public and private property and discarded belongings. Landslide debris - soil, gravel, rock, construction materials. Household hazardous waste	Downed trees; Wallboard; Carpets; Brown goods (e.g., furniture); White goods; Household hazardous waste; Greenwaste; Sandbags; Plastic; Food.	Landslides

Disaster Event	Damage	Materials Generated	Secondary Impacts
Earthquake	Infrastructure damage - concrete and asphalt highways, overpasses, bridges. Concrete, cement block, stone retaining walls, smashed vehicles. Asphalt from damaged parking lots. Building material, personal property, sediments caused by landslides.	Concrete; Bricks; Foundations; Asphalt; Wallboard; Glass; Rebar; Carpets; Asbestos; Greenwaste; Plastic; Food.	Secondary damage such as fires and explosions may result from disruption of utility systems. Waste generated from new construction and renovation.
Hurricane	Remains of damaged buildings, sediments, trees, personal property.	Wallboard; Carpets; Brown goods; White goods; Household hazardous waste; Wood; Lumber; Greenwaste; Sandbags; Plastic; Food.	
Tornado	Damaged and destroyed structures, trees, personal property.	Wallboard; Carpets; Brown goods; White goods; Household hazardous waste; Wood; Lumber; Greenwaste; Sand Bags; Plastic; Food.	
Civil Unrest	Damaged and destroyed structures, personal property.	Wallboard; Carpets; Brown goods; White goods; Household hazardous waste; Wood; Lumber;	

Pre-disaster Assessment

Disaster Event	Damage	Materials Generated	Secondary Impacts
		Food.	
Volcanic Eruption	Ash, downed trees, molten rock.	Ash	
Terrorist Acts	Damaged and destroyed structures.		

Waste characterization of disaster debris

Project types and amounts of debris:

Project the amounts and types of waste likely to be generated after a disaster. This will be one indicator of the types and scope of diversion programs that should be planned.

This will be your "best guess" based on the variables below:

- ◆ the type and severity of disaster;
- ◆ location and extent of the damage;
- ◆ building types and their age (residential, commercial, etc.);
- ◆ number of buildings affected; and
- ◆ population affected.

Purpose:

Although this waste characterization will only provide a general idea of the materials to be handled, some assumptions can be made about the facilities, processing, staffing, equipment, and markets that will be needed.

List of materials:

The list below shows those materials typically generated after a disaster. Generally, the post-disaster waste stream is composed of construction and demolition materials and personal belongings.

- ◆ concrete;
- ◆ asphalt;
- ◆ metals;
- ◆ greenwaste;
- ◆ plastic;
- ◆ sand bags;
- ◆ dirt;
- ◆ wallboard;
- ◆ wood; and
- ◆ glass.

Materials (cont'd):

- ◆ white goods - refrigerators, washers, dryers, stoves;
- ◆ brown goods - furniture (sofas, chairs) and other bulky goods;
- ◆ bricks; and
- ◆ household hazardous waste.

Other debris:

Keep in mind that other debris will be generated during the course of recovery . Examples include plastic water bottles and plastic sheeting associated with mass care (i.e. tent shelters); sand bags and dirt remaining after a flood or wildfire or used for erosion control.

Another factor can be the additional waste generated in the long-term from construction and renovation activities as well as ongoing demolition projects.

☐ **STEP 3: IDENTIFY TEMPORARY STORAGE SITES**

Purpose:

This assessment will indicate whether adequate temporary storage space for the projected types and amounts of disaster debris is available, the options for diversion programs given the ability or inability to store the materials, and example tasks to complete in order to secure storage areas.

Refer to Chapter 4 for more detailed information on temporary storage sites.

Actions to take:

- ◆ determine need for temporary storage areas;
- ◆ develop criteria for siting temporary storage or pre-staging areas'
- ◆ make a list of all possible sites: public and private;
- ◆ consider pre-approving sites and receiving permit in advance, to be activated upon declaration of disaster/emergency;
- ◆ consult with solid waste facility operators and Local Enforcement Agency on need to request emergency waiver of standards for waiver of certain minimum standards at landfill or to request establishment of a temporary storage or processing area;
- ◆ identify permit and environmental compliance requirements and time needed to process;
- ◆ decide the type and level of environmental assessment and monitoring needed to be performed at site;
- ◆ negotiate in advance the use or lease of public or private land;
- ◆ develop Site Operation Plan; and
- ◆ develop Site Restoration Plan.

When to use:

The better strategy is to transport the disaster debris directly to the landfill or recycling/processing facility rather than using a temporary storage site.

In this way, labor and transportation costs are paid once, whereas hauling to the temporary storage site

and then hauling again to the recycling facility and increase costs significantly.

And, FEMA may not pay for these additional costs. Prior to establishing a temporary storage site, contact FEMA to obtain prior authorization and to ensure reimbursement for these program costs. Refer to Chapter 6, Reimbursement, for more information.

Emergency waiver of standards regulations:

The Board has adopted the emergency waiver of standards regulations, which are found in California Code of Regulations, Title 14, Division 7, Chapter 3, Article 3, sections 17210 through 17210.9.

The regulations allow Local Enforcement Agencies to issue emergency waivers to solid waste facility operators, upon request, in the event of a state of emergency or local emergency. The waiver grants an operator temporary relief from specific state minimum solid waste standards or terms or conditions of the operator's solid waste facilities permit.

The waiver applies to the following:

- ◆ origin of waste;
- ◆ the rate of inflow for storage, transfer, or disposal of waste;
- ◆ the type and moisture content of solid waste;
- ◆ the hours of facility operation; and
- ◆ the storage time before transfer or disposal of wastes, at a solid waste facility.

A waiver can also be granted to an operator for the establishment of a locally-approved temporary transfer or processing site, if authorized by the LEA.

Criteria:

Examples of evaluation criteria for establishing temporary storage (pre-staging) areas are included in Chapter 4, Temporary Storage Area.

List sites:

Prepare a list of potential temporary storage sites based upon the types and amounts of materials projected to be collected, processed, and transported.

Check on available public and private sites for use as temporary storage, recycling, or disposal sites. Explore the possibilities of using city/county-owned land, state lands, and private property. Private property will probably be the last resort given the liability associated with this.

Examples: Examples of sites to consider include the following:

- ◆ landfill;
- ◆ recycling facility;
- ◆ right-of-way;
- ◆ vacant lot;
- ◆ corporation yard;
- ◆ parks;
- ◆ parking lot; and
- ◆ private property.

Do beforehand:

Securing storage sites is best done before a disaster strikes so that arrangements, such as leases and permits for the land, can be accomplished quickly.

Realistically, if sites are not designated in advance, it is unlikely that a jurisdiction will have enough time to do so when trying to manage the disaster recovery at the same time.

STEP 4: DETERMINE END-USES AND MARKETS FOR MATERIALS COLLECTED

Purpose:

This assessment will provide an overview of the markets needed, the processing requirements for the identified end-uses, and the type of facilities needed to handle the wastestream.

For purposes of this report, markets are considered outlets for raw or processed materials. End-uses are the products themselves that are made from the disaster debris e.g., crushed concrete, soil amendment.

Actions to take:

- ◆ Determine end-uses and market specifications for disaster debris.
 - ◆ List the local brokers and processors, materials they handle, and end-uses.
 - ◆ Identify market specifications for the selected end-uses.
 - ◆ Identify processing requirements for selected end-uses.
- ◆ Identify potential markets.
 - ◆ List the existing markets your jurisdiction is currently using, the materials accepted, and end-uses.
 - ◆ If located in or near a Recycling Market Development Zone, list the recycling businesses within the Zone and the secondary materials they accept and process and the end-products.
 - ◆ List local, state, and national waste exchanges available.
 - ◆ Identify potential projects within your city/county programs for materials collected (e.g., parks, public works).
- ◆ Identify markets still needed after evaluating existing, available markets for materials and quantities projected.
- ◆ Identify market barriers.

Determine end-uses

End-uses: Determine end-uses for materials before processing them. If materials are processed before the end-uses are determined, this may preclude their use for certain applications, thereby limiting their marketability.

For example, if concrete is ground too finely or is mixed with wood or brick, it cannot be used for certain road applications.

Market spec's: Ensure that processed materials will meet market specifications. For example, most crushed asphalt and concrete is used as road base on Department of Transportation (CalTrans) or local public works road projects. Most local governments, particularly in northern California, rely on CalTrans specifications for road materials. Many local governments in southern California rely on specifications in the *Greenbook*. (For a more detailed discussion of road base specifications, see the fact sheet *Recycled Aggregate* in Attachment A).

If specifications are not met, the material will be rejected. However, more relaxed standards may apply when using the processed material for less structural applications such as temporary roads at landfills or parks.

Also refer to Attachment B for a more detailed discussion of processing techniques and equipment.

Identify markets

Markets: Determine if established markets exist for the materials that will be collected. Identify the recyclers, processors, and brokers who can divert the designated materials and the amounts they can handle. This is best done beforehand so that arrangements can be made quickly and the materials moved off site immediately.

Potential markets:

Consider the following as possible markets for the disaster debris:

- ◆ City/county use for future projects such as temporary roads at landfills (concrete, brick, asphalt), daily cover (dirt), erosion control, parkways (mulch), and riprap;
- ◆ City/county use for aggregate base and subbase in public works road projects.
 1. See CalTrans Standard Special Provisions, which allow reclaimed asphalt and concrete in aggregate base and subbase, as described in fact sheet *Recycled Aggregate* (Attachment A).
 2. See *Greenbook*, which allows recycled material in crushed Miscellaneous Base and processed Miscellaneous Base. Both are described in fact sheet *Recycled Aggregate*.
- ◆ State agencies (Dept. of Parks & Recreation - mulch);
- ◆ CalMAX, the materials exchange program run by the California Integrated Waste Management Board. (See Attachment C for more information on how to use CalMAX);
- ◆ Recycling Market Development Zone businesses. Contact your RMDZ administrator if there is a zone in your county, or call the CIWMB, Market Development and Zone Assistance, at (916) 255-2708 for a listing of zones and participating businesses.
- ◆ National waste exchanges (see Attachment D for a listing);
- ◆ CalTrans use for aggregate base and subbase in road projects. See CalTrans Standard Special Provisions, which allow reclaimed asphalt and concrete in aggregate base and subbase, as described in fact sheet *Recycled Aggregate* (Attachment A).

- ◆ To market to CalTrans projects, review "going contracts" as described in the fact sheet *CalTrans and Recycled Construction Products*, (Attachment_E). |
- ◆ Salvage operations and local materials exchanges;
- ◆ Non-profit organizations;
- ◆ Out-of-state markets and brokers shipping to the Pacific Rim and Mexico.

Markets used:

The following table provides examples of the markets used by a number of jurisdictions for disaster debris:

JURISDICTION	MATERIALS	MARKETS
Humboldt County 1992 earthquake	<ul style="list-style-type: none"> ◆ Redwood and fir lumber ◆ Insulation ◆ Fixtures, appliances, carpets, roof shingles 	<p>Reuse by non-profit organizations; cogeneration</p> <p>Reuse by non-profit organizations</p>
City of Oakland 1989 Firestorm	<ul style="list-style-type: none"> ◆ Partly burnt or obstructing trees and branches ◆ Metals - Ferrous: cars, appliances ◆ Metals - non-ferrous: copper plumbing, aluminum siding ◆ Concrete/brick from destroyed foundations, walls, chimneys, driveways, fireplaces 	<p>Biomass fuel Composting/mulch. Soil amendment/fertilizer. Landfill cover (mixed with sewage). Firewood/logs. Used as firewood or as logs for construction.</p> <p>Sold to mills and smelters in U.S. or Pacific Rim for varied end uses) new cars, appliances</p> <p>Road construction material (Class II aggregate base. Meets CalTrans specifications)</p>
City of Santa Clarita 1994 Northridge earthquake	<ul style="list-style-type: none"> ◆ Gravel ◆ Drywall ◆ Metals 	<p>Cemetery base; gravel on ranch sites; backfill in sidewalks</p> <p>Recycled</p> <p>Recycled</p>
City of Los Angeles 1994 Northridge earthquake	<ul style="list-style-type: none"> ◆ Concrete; combination of concrete, red clay brick, and other inerts ◆ Rubble ◆ Gypsum wallboard 	<p>Landfill winter deck Landfill roads</p> <p>Landfill cover Winter deck Decorative gravel Aggregate road base</p> <p>Included in fines for daily cover</p>

JURISDICTION	MATERIALS	MARKETS
	<ul style="list-style-type: none"> ♦ Red clay brick ♦ Wood and green materials that could not be traditionally processed ♦ Well-screened dirt 	<p>Roofing amendment, decorative gravel</p> <p>Alternative daily cover at landfills</p> <p>Soil amendment</p>

Identify market barriers

Barriers: Identify the market barriers to recycling the collected materials. They can include:

- ♦ expense to collect, transport, and process the materials;
- ♦ low market price for materials;
- ♦ cheap virgin sources;
- ♦ limited end-uses and markets for materials; and
- ♦ few or no temporary storage sites.

Limit materials collected: Based on the analysis of market barriers, a jurisdiction may decide to limit the materials to be collected in its diversion program, thereby increasing the likelihood of recycling those that are collected.

Example: The City of Santa Clarita experienced a 97% diversion rate of their disaster debris after the 1994 Northridge earthquake. In large part, their success can be attributed to two factors:

1. a collection program limited to the following materials: concrete, asphalt, block wall, rubble, masonry, cinder block, clay brick, metals, and wood waste; and
2. the City's requirement for curbside separation of the waste.



STEP 5: IDENTIFY FACILITIES AND PROCESSING OPERATIONS

Purpose:

This assessment will help identify the recycling, reuse, and disposal facilities available or needed to process and/or store the disaster debris. Processing operations include wood chipping, concrete and asphalt crushing, and drywall recycling.

Given the projected amounts and types of debris anticipated, assess whether these facilities can handle the debris quickly, particularly if there are limited temporary storage sites.

Actions to take:

- ◆ Prepare a list of existing facilities and their ability to store, handle, and process waste: facilities include source separated, mixed recycling, and disposal
- ◆ Prepare list of facilities in neighboring jurisdictions that could be used.
- ◆ Map transportation routes to facilities and develop alternate routes.
- ◆ Review list of disaster debris likely to be generated and collected.
- ◆ Complete facility assessment form for each facility.
- ◆ Review list of potential end-uses and markets for collected materials.
- ◆ Based on the above, develop a list of facilities needed.
- ◆ Negotiate with franchise haulers, facility operators/owners, processors, and neighboring jurisdictions to use facility to collect, process, and/or divert disaster debris.

Facility types: The following facility descriptions are used throughout this document.

FACILITY TYPE	DESCRIPTION¹
Source separated facilities	accept materials such as concrete and asphalt exclusively for recycling
Mixed recycling facilities	accept both source-separated and all mixed debris, from which recyclable materials are processed for recovery and residuals are disposed of
Disposal facilities	accept materials for landfilling only

Assessment factors: To assist in the facility capacity assessment, determine the following for each facility. This should give an indication of whether to modify existing facilities or establish new facilities.

- ◆ expected waste types and origin of waste;
- ◆ materials accepted;
- ◆ remaining disposal capacity;
- ◆ processing capacity;
- ◆ processing barriers;
- ◆ description of on-site recycling facilities;
- ◆ expected storage capacity for disaster debris;
- ◆ on-site processing capability;
- ◆ proximity to disaster area; and
- ◆ disaster debris disposal/diversion reporting formats.

Site capacity: From the information gathered during the preliminary damage assessment, a jurisdiction should be able to determine whether the existing recycling facilities have the capability to process the expected volumes and types of debris and whether landfills have sufficient capacity for the expected volumes of debris. If not, consider the following:

- ◆ expanding an existing recycling facility;
- ◆ adding a temporary storage area at a landfill for recycling operations;
- ◆ establishing a new recycling facility; or
- ◆ expanding existing landfills for additional disposal.

Mix of facilities:

Identify any mixed or segregated construction and demolition recycling facilities in the area. If one is not available, consider establishing one, particularly if the materials collected will not be source separated.

To keep the average recycling tip fees at the lowest possible level, maintain a mix of source separation recycling facilities and mixed debris recycling facilities .

Negotiate in advance:

Negotiate with franchises, haulers, and facility operators/owners in advance to ensure that the facility will:

- ◆ be available when needed,
- ◆ be able to handle the amount and type of materials expected to be generated, and
- ◆ establish a diversion program for the materials collected, if one does not already exist.

Contingency plan:

In the event that major roadways are closed or landfills and recycling facilities are closed or damaged, develop a contingency plan to deal with the disaster debris until the roads and facilities are open.

- ◆ Develop a plan for temporary storage of the collected materials.
- ◆ Develop a policy to deal with putrescibles and with waste from the public until a diversion program is implemented.
- ◆ If the landfills you use are closed, make arrangements with neighboring jurisdictions or, if applicable, private landfill owners to use their facilities. Do this before a disaster strikes since it may take valuable time to negotiate the agreement and receive approvals, particularly from the local government governing body.
- ◆ Develop alternate transportation routes to facilities.



STEP 6: IDENTIFY PROCESSING TECHNIQUES AND BARRIERS

Introduction:	This section presents an overview of the barriers to recovering or reusing the construction and demolition (C&D) material and of the equipment and processing techniques involved in structured demolition and materials recovery.
Purpose:	This information can help jurisdictions plan and contract for the removal of structures. It will also help in the selection of equipment and processing techniques based on the materials to be processed and their end-uses. Refer to Attachment B for a more detailed discussion on processing techniques and equipment.
Actions to take:	<ul style="list-style-type: none">◆ Develop a processing strategy based on composition of C&D materials and their end-uses.◆ Select a processing strategy.◆ Review processing techniques for wood and concrete for projected end-uses.◆ Identify processing barriers and develop programs accordingly.
Processing strategy²	
Two points:	<p>The processing strategy to recover or reuse C&D materials depends on two things:</p> <ol style="list-style-type: none">1. the composition of the C&D materials, and2. the end-uses for the recovered materials. <p>Composition refers to the types of materials and the form in which it is received by the processors, either clean or mixed.</p>
Presort:	Presort all C&D materials as much as possible by unloading similar materials on specific areas, picking with front-end loaders, etc. Bulky items such as furniture, white goods, and major pieces of rubble or wood are often presorted.
Equipment:	For clean, sorted debris, the reduction equipment, such as impactors, jaw crushers, hammermills, and stump grinders, can provide quality end products.
Evaluate costs:	With mixed loads, it is important to evaluate the cost of separation versus land disposal. Certain loads may be so

contaminated or mixed that separation may not be economical.

Select a processing strategy³

Basic strategies:

There are two basic C&D processing strategies. The processing strategy to use depends on the nature of the mixed material.

1. Sort and separate, then crush and reduce.

For mixed material containing significant amounts of plastics, paper, rags, or other contaminants, it makes sense to sort and separate and then crush and reduce.

2. Crush and reduce, then sort and separate.

For fairly clean materials with a large portion consisting of rubble and wood, crushing and reducing the material first may be acceptable before sorting and separation.

Separate the rubble and wood first. Even small amounts of wood will disqualify aggregate from use as road base.

Processing strategy	Description
Salvaging	The traditional means of C&D recovery include salvaging of C&D materials on-site by contractors. These materials are then sold and provide additional revenues to contractors.
Dump and pick	This is also an old practice for the recovery of a limited amount of material. This practice reduces the bulkiness of C&D material by simply dumping the material on the ground and spreading it out using heavy equipment. Items that can be recycled are then hand picked during the process.
Separate soil and rock	After bulky material is removed by presorting, an effective first step for mixed material processing is to separate the soil and rocks beforehand picking out the cleaned and uncrushed recyclables. Soil and rocks are recyclable.

Identify processing barriers

Identify requirements: Identify processing requirements or barriers for collected materials. Determine the processing barriers that might limit the processing capability and hence the marketability of the collected materials.

Contamination: Contamination of materials is one of the biggest barriers that results in the landfilling of materials. Depending on the processing equipment being used, certain contaminants (nails in wood, rebar in concrete, wood mixed with the concrete) can preclude the materials from being recycled at all.

In addition, the debris may contain paint or asbestos that could be fragmented if crushed and would contaminate large amounts of C&D materials.

To minimize contamination, source separate the materials upon collection, and ensure that they remain separated during transport and processing.

For more info: For more information on handling asbestos, refer to Attachment F.



STEP 7: IDENTIFY PROCESSING EQUIPMENT NEEDS

Purpose: This step will help you identify the types of equipment you may need to implement the selected diversion programs and provide some options to consider when planning these programs.

Actions to take:

- ◆ After selecting the diversion or recycling programs to implement, compile a listing of equipment needed to support those programs.
- ◆ Survey the following to estimate the equipment you can have available in the event of a disaster:
 - ◆ your agency/department,
 - ◆ franchise hauler,
 - ◆ private sector, and
 - ◆ neighboring jurisdictions.
- ◆ Make a list of equipment needed in addition to what you will have available.

Survey hauler: Survey your local haulers or franchises to determine the staffing and equipment they can provide in a disaster. If they do not have equipment available, they may be able to acquire the equipment when needed. This may necessitate the jurisdiction writing contracts for debris removal and diversion outside the scope of the franchise agreement, as the City of Oakland did after the firestorm of 1991.

Survey needs: It is best to survey your labor and equipment needs before a disaster. Contact local dealers who can provide the equipment as needed, and make the appropriate arrangements before a disaster strikes. This includes pre-qualifying contractors or developing model contracts for debris recycling or removal.

Identify the equipment and labor the jurisdiction has available during a disaster. Determine the equipment and labor you can borrow from neighboring jurisdictions, keeping in mind they may also be affected by the disaster.

Lease: If facilities are not readily available, consider leasing equipment.

Rural areas:

In rural areas there may be fewer facilities or facilities that are farther away from the disaster site. In this instance, leasing equipment may be the cheapest and fastest way to deal with the debris.

Take into account the size of the equipment and the travel distance to bring the equipment on-site. Consider smaller, mobile equipment in these cases.

Contact local processors or equipment suppliers and manufacturers to estimate the size of equipment needed. In some cases, the quantity of materials to be processed may be too small to justify processing them.

More information:

For more information, refer to Chapter 3, Debris Management Programs.

☐ **STEP 8: REVIEW FUNDING OPTIONS**

Purpose: Review local funding sources to determine where funds can be obtained in a disaster to cover diversion and recovery programs until state and federal reimbursement are received.

Actions to take:

- ◆ Identify local or private funds that can be used to start program until FEMA reimbursement is received.
 - ◆ determine ability to use General Fund;
 - ◆ evaluate possibility of acquiring a loan; and
 - ◆ explore use of private funds.
- ◆ Prepare documentation regarding local policy for diversion/recycling.

NOTE: FEMA may/will not reimburse for donated monies or services.

Reimbursement: To initiate its recovery efforts, a jurisdiction must be knowledgeable about the state and federal reimbursement programs and the process for requesting funding.

Anticipate that the Federal Emergency Management Agency (FEMA) typically reimburses program costs, not advances them, and that the jurisdiction will need to identify funds to start-up programs until federal funding becomes available.

Small projects: FEMA will advance funding for "small projects," as contained in individual Damage Survey Reports. For "large projects," funding occurs as a reimbursement. Check with OES regarding the dollar amount associated with each "project" category as this amount is tied to the Consumer Price Index.

Documentation: Research documentation needed for FEMA, including all existing local policies, ordinances, debris management plans, etc. for recycling or diversion.

FEMA policy: FEMA's policy to date has been to reimburse for the "least cost" programs, and reimburse for diversion programs if they are in keeping with an existing policy of the jurisdiction.

However, the jurisdiction must document such policies, provide adequate documentation to FEMA, and receive their approval prior to implementing the diversion program in order to receive reimbursement.

Do in advance: Compiling this information in advance can save valuable time in receiving approval to proceed with the diversion programs and begin the recovery process.

Ownership of recyclables:

One of the City of Santa Clarita's goals in its Northridge earthquake cleanup program was to maintain ownership of the recyclables. This was to ensure that the disaster debris was diverted. However, the City later changed its position and assigned ownership of the materials to the contractor, who was responsible for collecting and marketing the materials.

The City took this action in an effort to avoid conflict with FEMA over reimbursement for its diversion programs. Had the City retained ownership of the collected materials and received revenues from their sale, FEMA could have reduced the City's reimbursement for the diversion program since there was no compelling local program or plan.

More information:

Refer to Chapter 6, Reimbursement, for more information.

☐ **STEP 9: DETERMINE CONTRACT NEEDS**

Purpose: This assessment is critical to ensuring that planned diversion programs are successful. It will give an indication of the types of contracts needed and outline the contracting options available to a jurisdiction.

Actions to take:

- ◆ review existing contracts and franchise agreements;
- ◆ determine contract needs;
- ◆ select contract type;
- ◆ develop model contracts;
- ◆ develop list of contractors in the area who are qualified and have equipment to handle the work and update annually;
- ◆ develop list of contractors who can respond in emergency and update annually; and
- ◆ pre-qualify contractors.

Review existing contracts:

Review all existing contracts and franchise agreements dealing with municipal solid waste, recycling, reuse, etc. Contracts and franchise agreements are pivotal to ensuring a successful debris management program. Unless diversion is specified, it is likely the collected debris will be disposed.

After deciding upon a debris management program(s) and having identified funding, the next step is program implementation. This can be accomplished through contracts for the debris removal, recycling, etc., ensuring that diversion language is included as a contract provision.

Determine contract needs:

Determine the type of contract best suited to the city/county's situation.

FEMA recommends three types of contracts typically used in disaster cleanup. They are:

- ◆ Time and Material Contract
- ◆ Lump Sum Contract
- ◆ Unit Price Contract

Alternate bid:

A fourth contract type is the Alternate Bid contract, which allows the contractor to select an alternate method to

perform the work stated in the contract, within specified parameters. An example of this is the CSU Northridge cleanup contract for the parking structure that was destroyed in the earthquake.

When to use:

The following table will help in the selection of a particular contract type, based on whether the work is for short- or long-term services.

CONTRACT	CONTRACT TYPE	USE WHEN ⁴
Time and Material	Short-term Services for first 100 hours.	Used immediately after a disaster for emergency life saving activities and debris clearance.
Lump Sum	Long-term Beyond initial 100 hours of recovery.	Use when scope of work is clearly defined and areas of work specifically quantified. Establishes total contract price by a one-bid item. (e.g., demolish and recycle 1 structure for \$10,000).
Unit Price	Long-term Beyond initial 100 hours of recovery.	Use when scope of work is defined and can be quantified by actual field measure (e.g., recycle 10 tons concrete, 7 trees, etc.)

Follow procedures:

Check to see if contracting and procurement provisions are suspended or modified in the event of an emergency or disaster. Be sure to follow the proper procedures since to circumvent them could jeopardize a jurisdiction's ability to receive state and federal funding for disaster operations.

Diversion options:

Refer to Chapter 5, Contracts, for more contract options to ensure that disaster debris is diverted from landfills.

☐ **STEP 10: REVIEW MUTUAL AID AGREEMENTS**

Purpose: This assessment will identify the type of assistance you can request from the neighboring cities and counties through mutual aid agreements, and those agreements that your jurisdiction should consider developing. (Refer to the table on page 36 for a list of existing mutual aid agreements or those under development).

Actions to take:

- ◆ Review existing mutual aid agreements
- ◆ Explore possibility of entering into discipline-specific mutual aid agreements, such as those for public works, Emergency Managers Mutual Aid, or public information.
- ◆ Develop a list of mutual aid agreements the jurisdiction is a signatory to and the resources available through each.

Mutual aid: Because California's disaster planning is based on a statewide system of mutual aid, this will be one of the first options a jurisdiction will use to get additional staffing and/or equipment.

Each local jurisdiction relies first on its own resources, then calls for assistance:

- ◆ city to city,
- ◆ city to county,
- ◆ county to county, and
- ◆ county to the regional office of the OES,
- ◆ which relays the request to the state.

For more detailed information on mutual aid, refer to Chapter 7.

Review agreements: Review the mutual aid agreements your city or county is a signatory to and list the types of assistance available through those agreements. Based on this review, your jurisdiction may identify mutual aid agreements that it needs to develop, or, for an existing agreement, become a signatory to.

Model agreement:	A Model Mutual Aid Agreement is contained in Attachment G; a city or county may consider developing such an agreement with neighboring jurisdictions specifically for debris management.
Public works:	A Public Works Mutual Aid Agreement, which may provide more specific assistance related to debris management, is under development by the OES Southern Region; jurisdictions may consider adopting a similar agreement . For more information, contact the Emergency Operations and Training Officer at the OES Southern Region, (310) 795-2900.
Public information:	In addition, a Public Information Mutual Aid Plan has been adopted by San Luis Obispo, Santa Barbara, and Ventura Counties; local governments may find this useful in developing a similar Plan to obtain resources to coordinate public outreach and media activities. Contact the nearest OES Regional Office for more information.
EMMA program:	Also consider the Emergency Managers Mutual Aid (EMMA) program, which is composed of emergency managers from cities and counties. The State Office of Emergency Services (OES) maintains mutual aid inventories and facilitates mutual aid among Operational Areas (counties) and among OES Regions. These emergency managers may be able to provide technical assistance and advice on debris management programs. Contact the nearest OES Regional Office for more information (see Attachment H for listing of OES regional offices).

CALIFORNIA MUTUAL AID PROGRAM⁵ Mutual Aid Systems and Channels of Statewide Mutual Aid Coordination			
COORDINATED BY STATE OES			COORDINATED BY EMSA^{**}
Fire and Rescue	Law Enforcement	Emergency Services	Disaster Medical
Fire Mutual Aid System	Coroners Mutual Aid System	All other emergency services mutual aid not included in other systems.	Disaster Medical Mutual Aid System.
Urban Search and Rescue System	Law Enforcement Mutual Aid System	Volunteer Engineers Mutual Aid System*	
	Search and Rescue Mutual Aid System (non urban)	Public Works Mutual Aid System*	
		Emergency Managers Mutual Aid System*	
		Hazardous Materials Mutual Aid System*	
		Water Agency Response Network (WARN)*	

*Systems currently under development

**Emergency Medical Services Authority

☐ **STEP 11: IDENTIFY LABOR NEEDS**

Purpose: This step will give you an estimate of the types of staffing you may need and provide some options to consider when planning diversion programs.

Actions to take:

- ◆ Estimate staffing requirements for diversion programs as part of staffing needed for overall recovery programs.
- ◆ List all possible sources for obtaining additional staffing, within the department as well as from other jurisdictions, volunteer groups, and state agencies.
- ◆ Enter into mutual aid agreements before disaster for staffing assistance.

More information: For more information, refer to Chapter 3, Debris Management Programs.

☐ **STEP 12: REVIEW LOCAL ORDINANCES**

Purpose: This assessment will give an indication of any ordinances that might affect planned diversion programs, and also alert city/county staff as to any administrative barriers to securing emergency contracts.

Actions to take:

- ◆ Review all local ordinances to determine the effect of existing ordinances on the following:
 - ◆ establishment of diversion programs;
 - ◆ establishment of temporary storage areas;
 - ◆ who has been delegated the authority to act on behalf of the governing body in the event of an emergency/disaster.
- ◆ Outline jurisdiction's local authority with respect to debris management.

Who's in charge: Become familiar with the local ordinances affecting a city or county's ability and authority to establish a diversion program or to enter into contracts on behalf of the city/county to manage the disaster debris.

Determine whether the City Council or Board of Supervisors has delegated contracting or other authority to city managers/staff in the event of an emergency or disaster and the extent of that authority. Also, evaluate the role of any existing Joint Powers Agreement/Authority regarding waste management.

Empower staff: It is important that the city/county staff responsible for the recovery be empowered by their local governing body to act independently in order to respond quickly. Having the flexibility to make independent decisions quickly can expedite the disaster response and the recovery operations.

Temporary Storage Sites

Local authority:

A city or county can use its authority to pass local ordinances in order to establish temporary storage sites. This is one option available in the absence of a requirement to obtain a solid waste facilities permit for the site.

After reviewing its existing land use ordinances, a jurisdiction can consider taking the following action(s):

- ◆ relax storage requirements at the temporary storage site;
- ◆ exempt certain discretionary actions from the California Environmental Quality Act; or
- ◆ waive storage standards at a particular temporary storage site for emergency storage; for example, if it is less than X cubic yards, depending on the local conditions.
- ◆ Or, the jurisdiction, through its zoning and land use authority, can establish temporary storage areas by passing a new ordinance in response to the emergency.

Examples

Abatement programs:

Following are two examples of ordinances passed to enact earthquake abatement programs:

City of Santa Clarita: The City of Santa Clarita passed Ordinance No. 94-01E (Emergency), An Emergency Ordinance of the City of Santa Clarita Establishing the Santa Clarita Abatement Program for the Mitigation of Structural Hazards and Debris Removal (see Attachment I).

Town of Los Gatos: The Town of Los Gatos passed Ordinance No. 1800, Urgency Ordinance of the Town of Los Gatos Establishing the Los Gatos Restoration Program for the Repair, Restoration and Reconstruction of Structures Damaged as a Result of the October 17, 1989 Earthquake (Attachment J).

Identify ordinances dealing with storage/stockpiling. (See discussion under Temporary Storage Sites in Chapter 4.

Effect of existing

Review all ordinances to determine if they will impact

ordinance: the disaster recovery programs. After the 1994 Northridge earthquake, the City of Los Angeles instituted a fencing program as part of the earthquake recovery. In the interest of public health and safety, and in keeping with the City ordinance requiring that all swimming pools be fenced, the City contracted for the damaged or destroyed fences to be repaired or constructed. The City paid for the work even if the fencing was on private property.

Sample requirements: When adopting a local ordinance related to diverting disaster debris, consider the example requirements described in Attachment K.

ATTACHMENTS

- A. Fact sheet, *Recycled Aggregate*.
- B. Processing techniques and equipment.
- C. CalMAX , materials exchange program.
- D. List of national waste exchanges.
- E. Fact Sheet, *CalTrans and Recycled Construction Products*.
- F. Fact Sheet, Asbestos.
- G. Model Mutual Aid Agreement
- H. List of OES Regional Offices
- I. City of Santa Clarita Ordinance No. 94-01E.
- J. Town of Los Gatos Ordinance No. 1800
- K. List of ordinances.

REFERENCES

- ♦ *Resource Recovery*, p. 34, August, 1993.
- ♦ Tchobanoglous, George, et al., *Integrated Solid Waste Management*, 1993.
- ♦ City of Los Angeles Northridge Earthquake Response Effort, Final Report, Issue No. 7 (9/15/95) .
- ♦ Debris Removal Guidelines for State and Local Officials, FEMA, DAP-15 (Draft)) Dec. 1991, Modified.
- ♦ SEMS, Emergency Operations Center Course, Module C3, page 6, Governor's Office of Emergency Services.

ENDNOTES

1. City of Los Angeles Northridge Earthquake Response Effort, Final Report, Issue No. 7 (9/15/95).
2. *Resource Recycling*, p. 34, August, 1993.
3. George Tchobanoglous, et al., *Integrated Solid Waste Management*, 1993.
4. Debris Removal Guidelines for State and Local Officials, FEMA, DAP-15 (Draft) Dec. 1997 Modified.
5. SEMS, Emergency Operations Center Course, Module C3, page 6, Office of Emergency Services.

CHECKLIST

CHAPTER 2 PRE-DISASTER ASSESSMENT

☐ **STEP 1: Develop local checklists**

- ◆ emergency organization alert list,
- ◆ available resources: staffing and equipment,
- ◆ mutual aid agreements,
- ◆ maps, charts, transportation corridors,
- ◆ list of TV, radio, wire services,
- ◆ non-profit organizations,
- ◆ facilities,
- ◆ markets and end-uses,
- ◆ haulers, brokers, processors,
- ◆ Recycling Market Development Zone (RMDZ) businesses,
- ◆ waste exchanges,
- ◆ temporary storage sites,
- ◆ contracts and franchise agreements, and
- ◆ ordinances.

☐ **STEP 2: Conduct a disaster event analysis and waste characterization analysis**

- ◆ Identify potential disasters.
- ◆ Analyze nature of risks posed with each disaster.
- ◆ Project amount of wastes generated.
- ◆ Estimate construction and demolition (C&D) disposal tonnage.
- ◆ Estimate waste components & quantities.
- ◆ Develop list of materials that could be included in diversion programs.



STEP 3: Identify temporary storage sites

- ◆ Determine need for temporary storage or processing sites.
- ◆ Develop criteria for siting temporary storage or pre-staging areas.
- ◆ Make a list of all possible sites: public and private
- ◆ Identify agencies involved in permitting temporary storage sites and processing activities or on-site processing activities.
- ◆ Consider pre-approving sites and receiving permit in advance, to be activated upon declaration of disaster/emergency.
- ◆ Enact ordinance regarding temporary storage sites (waiver)
- ◆ relax storage requirements
- ◆ exempt certain discretionary actions from CEQA
- ◆ re-zone sites if needed through City Council
- ◆ Identify permit and environmental compliance requirements and time needed to process.
- ◆ Decide the type and level of environmental assessment and monitoring needed to be performed at site.
- ◆ Set up guidelines for use of the temporary site (materials that will be accepted, condition of materials, hours, etc.)
- ◆ Develop hazardous waste screening program
- ◆ Negotiate in advance the use or lease of public or private land.
- ◆ Develop Site Operation Plan.
- ◆ Develop Site Restoration Plan.



STEP 4: Identify end-uses and markets

- ◆ Determine salvageable and/or recyclable materials.
- ◆ Determine end-uses and market specifications for disaster debris.
- ◆ Develop directory of businesses/processors, materials and volumes they can handle.
- ◆ Identify processing requirements for selected end uses.
- ◆ Identify potential markets.
- ◆ List the existing markets your jurisdiction is currently using, the materials they accept, and their end-uses.

- ◆ If located in or near a Recycling Market Development Zone:
 - ◆ list the businesses within the Zone, and
 - ◆ the secondary materials they accept and process,
 - ◆ the end-products.
- ◆ List local, state, and national waste exchanges available.
- ◆ Identify potential projects within your city/county programs for materials collected (e.g., parks, public works).
- ◆ Identify markets needed after evaluating existing, available markets for materials and quantities projected.
- ◆ Identify market barriers.



STEP 5: Identify Facilities and Processing Operations

- ◆ Prepare list of existing facilities:
 - ◆ source separated,
 - ◆ mixed recycling, and
 - ◆ disposal.
- ◆ Prepare list of facilities in neighboring jurisdictions that could be used.
- ◆ Review list of disaster debris likely to be generated and collected (from Step 2).
- ◆ Complete facility assessment form for each facility.
 - ◆ materials handled
 - ◆ processing capacity
 - ◆ processing barriers
 - ◆ remaining disposal capacity of facility
 - ◆ description of on-site recycling facilities
 - ◆ expected waste types and origin of waste
 - ◆ expected storage capacity for disaster debris
 - ◆ disaster debris disposal/diversion reporting formats
- ◆ Review list of potential end-uses and markets for collected materials (from Step 5).
- ◆ Based on the above, develop a list of facilities needed.
- ◆ Negotiate with franchise haulers, facility operators/owners, processors, and neighboring jurisdictions to use facility to collect, process, and/or divert disaster debris.
- ◆ Identify air and/or water quality permits that must be obtained.

- ◆ Identify transportation corridors and alternate routes and develop contingency plan.



STEP 6: Identify processing techniques and barriers

- ◆ Develop a processing strategy based on composition of C&D materials and their end-uses.
- ◆ Select a processing strategy.
- ◆ Review processing techniques for wood and concrete for projected end-uses.
- ◆ Identify processing barriers and develop programs accordingly.



STEP 7: Identify processing equipment needs

- ◆ Compile a list of processing equipment needed to support selected diversion programs.
- ◆ Survey the following to identify the equipment available in the event of a disaster:
 - ◆ agency/department,
 - ◆ franchise hauler,
 - ◆ private sector, and
 - ◆ neighboring jurisdictions.
- ◆ List equipment needed in addition to what will be available.



STEP 8: Review funding options

- ◆ Anticipate FEMA reimburses program costs, not advances them.
 - ◆ identify local General Fund or private funds that can be used to start program until FEMA reimbursement is received;
 - ◆ evaluate possibility of acquiring a loan; and
 - ◆ explore use of private funds.
- ◆ Prepare documentation re local policy for diversion/recycling.



STEP 9: Determine contract needs

- ◆ Review existing contracts and franchise agreements.
- ◆ Determine contract needs.
- ◆ Select contract type best suited to local situation
- ◆ Develop model contracts.
- ◆ Include diversion/recycling language in contract.

- ◆ Set up tracking system (load verification requirements).
- ◆ Develop list of qualified contractors in the area who have equipment to handle the work.
- ◆ Develop list of contractors who can respond in emergency.
- ◆ Pre-qualify contractors.

☐ **STEP 10: Review Mutual Aid Agreements**

- ◆ Review existing mutual aid agreements.
- ◆ Explore possibility of entering into discipline-specific mutual aid agreements, such as:
 - ◆ public works,
 - ◆ Emergency Managers Mutual Aid, or
 - ◆ public information.
- ◆ Develop a list of mutual aid agreements the jurisdiction is a signatory to and the resources available through each.

☐ **STEP 11: Identify labor needs**

- ◆ Estimate staffing requirements for diversion programs as part of staffing needed for overall recovery programs.
- ◆ List all possible sources for obtaining additional staffing
 - ◆ city/county staff from other agencies,
 - ◆ human services agencies and non-profit organizations, or
 - ◆ volunteers.
- ◆ Enter into mutual aid agreements before disaster for staffing assistance.

☐ **STEP 12: Review local ordinances**

- ◆ Identify all local ordinances affecting a jurisdiction's ability and authority to establish a diversion program or to enter into contracts to manage the disaster debris.
- ◆ Determine who in the jurisdiction has been delegated the authority to act on behalf of the governing body in the event of an emergency/disaster.
- ◆ Outline jurisdiction's local authority with respect to debris management.
- ◆ Identify or establish local ordinances relating to temporary storage sites:
 - ◆ relax storage requirements, or

Checklist
Pre-Disaster Assessment

- ◆ exempt certain discretionary actions from California Environmental Quality Act (CEQA).

CHAPTER 3

DEBRIS MANAGEMENT PROGRAMS

Background:

The decision whether to establish a debris diversion program is made at the outset of the disaster response and in the wake of extreme pressure to first restore public services and ensure the public health and safety.

Diversion programs may not seem a priority in comparison to the initial life saving operations that a jurisdiction must undertake. However, with some planning and forethought, these programs can be implemented and significant savings realized in reduced labor, transportation, and disposal costs, and preservation of landfill capacity.

What's in this chapter

Overview:

This chapter presents common issues and potential barriers to the diversion programs discussed in the Plan.

The pre-disaster, or planning, activities are discussed in Chapters 1 and 2, Government Coordination and Pre-disaster Assessment respectively. By developing the checklists discussed in these chapters, a jurisdiction can evaluate its level of preparedness to handle disaster debris and focus on those areas that need to be developed.

Following is a summary of steps integral to developing a debris management strategy and establishing diversion programs. The 21 steps highlight the issues common to debris management programs in general.

Debris Management Programs

Step	Actions to take	Page
1	Make diversion programs a priority.	3-3
2	Become familiar with federal debris removal criteria and guidelines.	3-5
3	Develop debris removal and diversion strategies.	3-6
4	Identify project scope	3-9
5	Select debris management program.	3-12
6	Identify program barriers.	3-17
7	Set program goals.	3-20
8	Identify labor needs.	3-22
9	Identify equipment and processing requirements.	3-25
10	Determine method of operation.	3-29
11	Adapt program length.	3-33
12	Develop funding options.	3-35
13	Establish public information program.	3-37
14	Develop monitoring and enforcement program.	3-40
15	Develop a contingency plan.	3-42
16	Pursue regional coordination.	3-45
17	Develop incentives for diversion.	3-47
18	Compile documentation and develop /tracking system	3-49
19	Develop a training program.	3-51
20	Set up records retention system and archives.	3-52
21	Prepare a final report.	3-53

☐ **STEP 1: MAKE DIVERSION PROGRAMS A PRIORITY**

Make it happen:

It is imperative that top management give high priority to debris diversion programs at the outset and provide the necessary support and resources for the programs. Without leadership and dedicated support from those directing the disaster recovery, recycling and diversion programs become secondary in importance, thus losing opportunities to establish such programs.

Local policies:

Pre-planning is the most effective way to ensure diversion activities are carried out after a disaster. Jurisdictions can identify and establish in advance local policies for diversion programs in the event of a disaster.

Another method is for local governing body to pass a resolution stating that in the event of a disaster, the jurisdiction will implement debris management programs, primarily diversion programs.

By having local policies in place to require that recycling or other diversion programs be implemented after a disaster, or routinely, can lend critical support to a jurisdiction's request to receive FEMA reimbursement for recycling and other diversion programs.

Authority to act:

The following are examples of how City staff responsible for implementing the programs and executing contracts for those programs were given the direct authority to do so by their governing body.

This flexibility allowed staff to concentrate on managing the disaster response by expending less time on administrative processes to obtain approvals to carry out the response.

Debris Management Programs

Example:

City of Santa Clarita

The City of Santa Clarita City Council delegated responsibility to the City Manager to handle all phases of the disaster response and recovery. The City Manager in turn delegated responsibility for the development of the debris management strategy and programs to the Solid Waste Division, which consisted of a staff of three. Even so, the City's earthquake program realized a 97% diversion rate based on recycling more than 250,000 tons of debris over an 11-month period.

City of Oakland:

The Oakland City Manager was authorized by emergency ordinance to take action for the protection of life and property in a disaster. As a result, during the 1991 Firestorm, the City Manager was authorized to take those actions necessary to carry out the disaster recovery, which included executing contracts for debris removal, recycling, and/or disposal. Having such an ordinance in place before a disaster saved the City considerable time in initiating its disaster recovery operations.

☐ **STEP 2: BECOME FAMILIAR WITH FEDERAL DEBRIS
REMOVAL CRITERIA AND GUIDELINES**

Become familiar: Upon the Presidential declaration of a major disaster or emergency, Federal assistance is available. FEMA designates the area eligible for assistance and the types of assistance available. FEMA may grant assistance for:

- ◆ debris removal,
- ◆ emergency protective measures, and
- ◆ the permanent restoration of facilities.

To increase your jurisdiction's preparedness, become familiar with the type of state and federal assistance that is available because this will likely determine the type and scope of debris removal and diversion programs to be established during the recovery phase.

Attachment: For more detail on the federal debris removal criteria and guidelines, refer to Attachment A of this chapter.

☐ **STEP 3: DEVELOP A DEBRIS REMOVAL STRATEGY¹**

Two phases:

In its pilot Debris Management Course, FEMA recommends developing a debris removal strategy for large-scale debris removal operations by dividing the operation into two phases.

In addition, based upon the experience of California jurisdictions in their recovery operations, it is recommended that diversion program activities be incorporated into the Phase II operation, as reflected below.

Phase I - removing debris that hinders the immediate life saving actions that pose an immediate threat to public health and safety; and

Phase II - removing and disposing of debris that hinders the orderly recovery of the community and poses less immediate threats to health and safety.

Diversion - include development of debris management strategies, including establishment of programs for recycling and reuse of the disaster debris, as well as monitoring of removal and diversion activities to include the tasks in the table below.

Debris Management Programs

Phases description: Activities carried out in each phase are described in the table below:

Debris Removal Phases	Actions to be taken
Phase I: Emergency Roadway Debris Removal	<p>Clearing emergency access routes. Roadway debris is moved to the side of the road to open access routes into devastated areas.</p> <p>No attempt is made to remove or dispose of the debris, only to clear key access routes to allow for the following:</p> <ul style="list-style-type: none">♦ movement of emergency vehicles,♦ law enforcement,♦ resumption of critical services, and♦ damage assessment of critical public facilities and utilities.
Phase II: Public Rights-of-Way Debris Removal	<p>During the emergency opening of key routes, mixed debris is pushed to the shoulders of the roadway, along the public right-of-way. The initial road side piles of debris can become the dumping locations for additional yard waste, personal property, construction material, trash, etc.</p> <p>"The debris manager and staff must now coordinate the removal of this debris, and should be prepared to take the following actions:</p> <ul style="list-style-type: none">♦ "develop a reliable initial assessment of the disaster's magnitude;♦ coordinate through local agencies to establish a contracted work force capable of expeditions removal of the debris;♦ coordinate with local and state Department of Transportation and law enforcement authorities to ensure that traffic control measures expedite debris removal activities;♦ evaluate damaged utility systems, structurally unstable buildings, and other heavily damaged public facilities and determine if they should be repaired, deactivated, barricaded, or removed;"²
Diversion programs development	Develop a debris diversion strategy for establishment of diversion (recycling and reuse) programs that includes the following:

Debris Management Programs

Debris Removal Phases	Actions to be taken
	<ul style="list-style-type: none">◆ projected types and amounts of materials likely to be generated;◆ available processing facilities and potential end-use markets for the collected debris;◆ list of haulers and processors;◆ labor and processing equipment needs;◆ temporary storage areas; contracts and franchise agreements;◆ public information program methods; and◆ funding options. <p>Monitor the removal and diversion activities to:</p> <ul style="list-style-type: none">◆ develop a tracking and documentation system to account for the types and amounts of debris collected;◆ develop contingency plan to handle debris immediately after disaster;◆ develop diversion incentives;◆ develop monitoring and enforcement program;◆ set up records retention system and archives; and◆ prepare final report on program activities and results.

☐ **STEP 4: IDENTIFY PROJECT SCOPE³**

Project scope: Identifying the project scope is critical to setting the parameters for recovery operations (Phases II and III). Take the following steps:

- ◆ define the project area;
- ◆ determine if jurisdiction will remove debris from private property;
- ◆ develop an estimate of the types and quantities of debris to be removed (see Chapter 4);
- ◆ select temporary storage, recycling, and disposal sites; and (see Chapter 4); and
- ◆ determine need for processing facilities and whether existing disposal capacity is sufficient for expected volumes of debris.

Private property demolition and debris removal

Who is responsible: The need for private property debris clearance is the first critical determination that has to be made in defining the specific area or areas to be contracted.

Debris removal on private property is the primary responsibility of the individual property owner aided by insurance settlements and assistance from voluntary agencies.

Insurance coverage: Most homeowner, fire, and extended coverage insurance policies have specific coverage for debris removal from private property and for demolition of heavily damaged structures. Flood insurance policies do not provide coverage for debris removal.

The standard practice is that the individual property owners are responsible for moving debris to the curb for pick up by city or county work forces.

Public agency In those cases where the individual property owners are

responsibility: unable to remove the debris from their property, the jurisdiction may determine that it is in the public interest to remove the debris for them.

Use the following criteria to make this decision:

- ◆ the debris is an immediate health and safety threat to the general public, or
- ◆ the debris is of such a magnitude that the economic recovery of the community would be threatened.

Example: No-cost demolition

In establishing its building demolition program after the Northridge earthquake, the City of Los Angeles determined that most of the affected residents did not have earthquake insurance. As a result, the City assumed responsibility for the demolition of private structures that threatened the public health and safety.

To help residents rebuild, the City offered demolition services at no cost if the building had suffered greater than 50% damage or had greater than 35% of its structural system compromised.

Release form: A standard release form from individual property owners is required to hold and save the government free of liabilities when government forces or contractors perform work on private property. (A copy of a typical release form can be found in Attachment B).

Map project area: Clearly define the limits of the project area by delineating the boundaries of the project area on a map.

This map will identify to contractors the area or areas to be included in the contract.

Additionally, in a debris removal project where many contractors may be working, this can help ensure that the contractors remain in their assigned work area. Establishing the work area is also important to identify key items such as:

Debris Management Programs

- ◆ ingress and egress routes to the project area;
- ◆ location of utilities; and
- ◆ distance to recycling, storage, and disposal sites.



STEP 5: SELECT A DEBRIS MANAGEMENT PROGRAM

Criteria for selection:

Once a jurisdiction has undertaken an assessment of its probable waste stream, facilities, temporary storage areas, and markets for the collected materials, it can then determine the program(s) to be implemented.

For the specific assessment, refer to Chapter 2, Pre-disaster Assessment. This will indicate the types of materials that could be generated during different kinds of disasters. Based on the amount and types of debris to be handled, jurisdictions can plan for diversion programs accordingly.

Assessment factors:

The selected program should be best suited to the jurisdiction based on an assessment of the following:

- ◆ materials generated,
- ◆ facilities available,
- ◆ need for temporary storage areas,
- ◆ haulers/processors/brokers,
- ◆ processing requirements/barriers,
- ◆ end-uses for collected materials,
- ◆ markets, and
- ◆ local conditions.

Most often used programs:

Programs most often used include those in the table on the following pages. For each major program type, there will be source separated recycling programs to handle a particular waste type. Examples include mulching and chipping operations for wood, smelting for metals, and concrete crushing. Issues associated with each of the diversion programs are also included for consideration as they could impact the program's effectiveness.

Debris Management Programs

Program	Description	Materials generated	Source separated recycling programs	Issues
Curbside	Residents place their disaster debris at the curbside for city crews or contractors to pick up.	household furniture, wallboard, wood, metals, concrete, bricks, HHW (see below)	wood chipping, mulching, concrete crushing	<p>Source separation is key to avoiding contamination and increasing product marketability. Consider requiring source separation as part of the program and advertise program requirements to residents and contractors. Source separation on site can decrease costs for labor, transportation, processing, and disposal.</p> <p>One approach is to offer free debris pick-up if materials are separated at the curb and charge a high fee for the pick-up of mixed debris.</p>
Building Demolition	Buildings damaged beyond repair or those representing a safety hazard are torn down.	wood, concrete, metals, bricks, drywall	wood chipping, mulching, scrap metal	<p>Hand salvaging will yield more recyclable materials, although time required to do so may be more than traditional demolition. For building demolition in general, Increased savings in disposal and transportation costs, with likely increase in labor costs.</p> <p>Depending on the age of the building, asbestos and lead paint abatement may be a concern.</p>
HHW	Residents take their HHW to a collection event, mobile collection vehicle, or to a	paint, pesticides, household cleaners, oil	oil filter recycling material exchange hazardous	<p>Residents must be informed to keep HHW separate from the rest of the disaster debris. This will reduce contamination of the</p>

Debris Management Programs

Program	Description	Materials generated	Source separated recycling programs	Issues
	permanent collection center.		waste disposal	materials and will help to ensure that collected materials are not designated as hazardous and disposed of as such.
Drop-off	Residents place debris in bins located throughout the community. Separate bins can be designated for specific materials or all materials can be placed in one bin and separated later.	same as curbside	same as curbside	This may be more convenient for remote or rural areas where curbside collection is not available or practical or in areas where the topography precludes curbside collection. Contamination of materials is a concern as is security at the collection sites. Placement of the equipment may pose problems, depending on the area's topography .
Fencing	This program was specific to the City of Los Angeles and instituted because the City had an ordinance requiring that all swimming pools be fenced.	cinder block		The City assumed responsibility for fencing pools on private property in the interest of public health and safety.
Ghost Town	Abandoned private property was boarded up for public health and safety reasons.	N/A	N/A	Liability issues and crime prevention are the most pressing issues.

Other programs

- Ghost town program:** Does a city/county assume liability for private property that has been abandoned by the property owner if the property poses a public health or safety threat? This may be an issue facing your jurisdiction for which you will need to develop a policy.
- Abandoned property can lower the surrounding property values or create a public nuisance. The City of Los Angeles responded by assuming liability for the abandoned properties and executed a *Ghost Town* contract whereby the City boarded up, cleaned, and fenced the abandoned properties.
- Condominiums:** In the case of condominiums, FEMA will authorize demolition work only if all owners of the condominiums participate in the demolition program. Consider how to handle a situation where not all residents want to participate in the city or county-sponsored program, thus eliminating the other residents' ability to have their homes demolished.
- Drop-off program:** A drop-off program may be more useful for remote communities, those where residents do not have curbside pickup, or areas that are sparsely populated. Issues to consider are contamination of materials and security needs at the site.
- Example:** The City of Santa Clarita considered setting up a program using roll-off bins, but instituted a curbside collection program instead based on the following considerations:
- ◆ In order to achieve a high level of service, it would require a roll-off box on every corner. It is doubtful that any company could supply this.
 - ◆ Roll-off container use would increase the amount of mixed waste deposited in them. This in turn, would reduce the recycling rate.
 - ◆ Removing waste from the bins presented the potential for extra equipment since loaders are needed to get debris to dumping level.

Debris Management Programs

- ◆ Roll-off bins represented a potential increased liability.
- ◆ The bins also posed a potentially greater traffic hazard via blind spots from roll-offs at every corner versus occasional piles of debris at the curbside.
- ◆ The cost for roll-off is potentially more than curbside pickups programs. Beyond the initial capital outlay, the City had to consider that FEMA will only reimburse low-cost bid.

☐ **STEP 6: IDENTIFY PROGRAM BARRIERS**

Identify barriers:

Identify potential barriers to a debris management program and develop contingency plans to avoid problems. This will assist in proposing solutions to those barriers in advance. Such barriers can include:

- ◆ blockage of major transportation corridors;
- ◆ closure of recycling or disposal facilities;
- ◆ lack of funding;
- ◆ lack of temporary storage areas (see Chp. 4);
- ◆ illegal dumping at temporary storage areas (see Chp 4);
- ◆ limited markets for targeted waste types;
- ◆ limited contractors available;
- ◆ residents, businesses, and other governmental agencies cleaning up independently of the city/county-sponsored program; and
- ◆ insurance company requirements.

Liability:

Be aware of the liability issues associated with debris management and develop procedures to handle the following:

- ◆ wrong building demolished;
- ◆ city workers or volunteers entering and damaging private property City/county worker/contractor injured;
- ◆ "debris" collected from private property which should not have been removed;
- ◆ ghost towns (abandoned property); and
- ◆ demolishing a unit in a condominium complex.

Rebuilding:

Rebuilding also generates debris. Although rebuilding activity is a result the disaster, the waste generated is not considered disaster debris. For this reason, FEMA reimbursement may not be available. Check with your OES Regional Office to determine the rebuilding activity's funding eligibility.

A jurisdiction, however, can take advantage of diversion programs already established to handle the disaster debris and capture the rebuilding wastestream.

To avoid confusion, keep the two wastestreams separate so FEMA reimbursement for the disaster debris program will not be affected. However, this was not possible in Los Angeles since many victims were still removing earthquake debris while neighbors were rebuilding. There was no clear end to one activity before beginning the other.

Greenwaste:

In addition, this is the time residents may work on landscaping their yards and generate large amounts of greenwaste. Again, this is not debris generated as a direct result of the disaster, and is not eligible for FEMA reimbursement.

Jurisdictions should take note if this occurs and notify homeowners that the debris must be kept separate from the earthquake-related debris (that is, do not place this material at the curbside or place in bins designated for disaster debris, etc.)

Source separation:

Source separate materials and leave them at the curb. In this way, they can be sent directly to processing facilities. If you place all debris together at the curb, it is more likely that the materials will be sent to a mixed waste facility, which can be significantly more costly than a recycling facility.

Realize that there will be extra labor costs for separating the collected materials before they go to a recycling facility. This equates to more time and expense. This can also be the key to realizing a successful diversion program.

Mixed waste

Because many jurisdictions may not have mixed waste

Debris Management Programs

facilities: facilities nearby, this will limit the diversion potential. In the case of the City of Los Angeles, one of the City's goals was to establish mixed waste facilities not only to handle the disaster debris but also to become part of the infrastructure and be available after the disaster debris was gone.

CalTrans: The State Department of Transportation (CalTrans) maintains jurisdiction over any state or federal road. Consequently, when these roads/freeways are repaired, demolished, or rebuilt, CalTrans is responsible for the cleanup of the resulting debris.

Although the city or county may have established a diversion program for these materials collected in a city/county cleanup, it will be necessary to discuss the diversion of these materials with CalTrans individually. CalTrans can specify in the cleanup contract that the contractor will divert or recycle the materials.

☐ **STEP 7: SET PROGRAM GOALS**

Background:

It is important at the outset to set program goals for the recycling and diversion programs undertaken. Program goals will help determine the program's success in meeting diversion goals, ensure the program's cost-effectiveness, and help evaluate whether changes are needed during implementation or whether other programs need to be established.

Example:

After the Northridge earthquake in 1994, the City of Los Angeles established goals for their pilot debris removal program which consisted of two components:

1. collection of earthquake debris placed at curbside by City residents, and
2. demolition of buildings damaged by the earthquake.

Program goals:

The program goals for the pilot program were to:⁴

- ◆ determine maximum recycling rates;
- ◆ determine facility needs for a massive diversion effort;
- ◆ gain knowledge about the costs associated with a diversion program run at maximum efficiency;
- ◆ increase, through private investment, the capacity of private sector facilities which can process mixed earthquake (and C&D) debris for recovery of recyclables at high rates; and
- ◆ save landfill space.

DSR for recycling: Based on the success of the pilot program, FEMA approved a Damage Survey Report (DSR) for the City's debris removal and recycling program which was then expanded citywide. (See Attachment D for a copy of the DSR).

DSRs:

Damage assessments and Damage Survey Reports or DSRs are the foundation for FEMA/OES reimbursement after a disaster. The DSRs provide a description of the damage, set forth the scope work, and give a cost estimate of the work to be performed. Based upon the damage assessment conducted by the federal/state/local inspection

teams, a DSR is written. (Refer to Chapter 16 for more information on damage assessments and damage survey reports).

Example:

Similarly, the City of Santa Clarita, in establishing their diversion programs after the Northridge earthquake, set up the following program features. The City identified the following five features as ones that would maximize recovery and diversion while maintaining an effective collection effort.

- ◆ No tipping fees. This would discourage illegal dumping.
- ◆ Enforcement of illegal dumping ordinances or regulations.
- ◆ Provide debris diversion information to haulers and residents.
- ◆ Provide security assurance against hazardous materials or contaminated inerts being dumped.
- ◆ City will assume ownership of material product to ensure reuse.

Contractor responsibility:

Although this was one of the City's goals, the City later changed its position and assigned ownership of the materials to the contractor, who was responsible for collecting and marketing the materials. The City did this in an effort to avoid conflict with FEMA over reimbursement for its diversion programs. Had the City retained ownership of the collected materials and received revenues from their sale, FEMA could have reduced the City's reimbursement for the diversion program since there was no compelling local program or plan.

☐ **STEP 8: IDENTIFY LABOR NEEDS**

Estimate staffing:

An estimate of staffing becomes one of the most important aspects of disaster debris management as the recovery begins. It is likely that the jurisdiction's staffing resources will be overwhelmed in responding to the disaster.

Staff will be needed to manage the recovery programs as well as field staff to implement the programs. There are several resources available that can help a jurisdiction in its emergency response.

- ◆ Mutual Aid Agreement;
- ◆ Emergency Managers Mutual Aid;
- ◆ California Conservation Corps (CCC);
- ◆ Employment Development Department (EDD);
- ◆ City/county staff available from other agencies; and
- ◆ volunteer and non-profit agencies.

Determine staffing needs in light of the diversion program needs. Based upon the selected program, identify staff resources needed, including number and classification of staff. Identify staff available within the agency and those who may be needed from other agencies.

Do not underestimate the staffing needed to develop and maintain a tracking system to monitor the debris recycled and disposed and the facilities used. The system is critical to verifying weight tickets when used as payment, determining the program's recycling and disposal rates, and monitoring facility usage. The City of Los Angeles employed six full-time staff.

For more information, refer to the City of Los Angeles' *Northridge Earthquake Response Effort, Final Report*, Issue No. 7, 9/15/95.

For assistance:

To request mutual aid from neighboring cities or counties, follow the Standardized Emergency Management System Mutual Aid procedures (see Chapter 13 for more information on SEMS).

Staff functions: Keep in mind that staff will be needed for diversion program implementation as well as for the administrative functions that will serve the overall recovery operations. A listing of the staff functions that will be needed in recovery operations is contained in the table, "Departments and Functions Represented in Recovery Process" on pages 7-9 of Chapter 1.

Employment Development Department

Assistance provided: The **Employment Development Department** (EDD) can provide workers through the Job Training Partnership Act (JTPA) contract (funds provided by FEMA and administered by the State EDD).

Plan for workers: Be aware that the city/county is dependent upon EDD preparing a plan to use the workers, which FEMA must approve before workers can be hired. In the case of Northridge, six months elapsed before EDD had completed the plan, although the City of Los Angeles needed the workers immediately.

Job descriptions: In addition, the JTPA (EDD) contract targeted workers from the disaster area who had lost their jobs or had otherwise been displaced by the disaster. However, before EDD can submit a plan to FEMA to use the workers, the jurisdiction must write job descriptions and determine job classifications for these workers.

Consult unions: Be sure to consult with the unions for city and county workers to ensure that this outside labor does not affect union agreements. In the case of the City of Los Angeles, the unions did not object to the contract.

☐ **STEP 9: IDENTIFY EQUIPMENT AND PROCESSING REQUIREMENTS**

Equipment types: Make equipment selections based upon the type of activity to be carried out and the materials involved. The table below groups construction and demolition (C&D) processing equipment into three main types:

- ◆ conveying,
- ◆ crushing/reducing, and
- ◆ screening/separating.

	EQUIPMENT	MATERIALS HANDLED
Conveying Equipment	Conveyors transfer materials from one location to another. The most common type of conveying equipment used to process C&D is a belt conveyor which consists of a strip of belting material that is looped around a shaft on each end.	All types of C&D
Crushing/Reducing Equipment	Size reduction is the unit operation in which waste materials are mechanically reduced in size. The objective is to obtain a product that is reasonably uniform and considerably reduced in size in comparison with its original form.	
1. Hydraulic breaker or jackhammer	A pneumatic impact tool is used for breaking oversized material into pieces small enough to be processed by the next crusher/reduction unit in the process.	Concrete pavement, foundations.
2. Jaw Crusher	Designed to crush large chunks of concrete, asphalt, etc.	Concrete, asphalt, pipes, steel, rebar, manhole lids, etc. Compressible materials such as wood and plastics tend to jam up the jaws and severely reduce throughput.
3. Hopper	Receives the chunks and feeds them to the cone, or impactor.	Can choose either cone or impactor, or both.
4. Cone	Crushes concrete and asphalt to aggregate size	Can choose either cone or

Debris Management Programs

	EQUIPMENT	MATERIALS HANDLED
		impactor, or both.
5. Impactor	Crushes concrete and asphalt to aggregate size	
Hammermill	Also known as wood hogs, can process a variety of wood materials. Reduction occurs as the heavy hammers, attached to a rotating element, impact the material as it enters and eventually force the shredded material through the discharge of the unit.	Wood
Stump Grinder	Large machines, often trailer-mounted and top-loaded by on-board knuckleboom loaders. The machine is more expensive than a wood hog but can handle large bulky materials.	Wood, stumps
Rotary Shear Shredders	Low-speed, high-torque machines that rip and tear material apart.	Ideal for primary reduction of bulky wood material, such as pallets, crates and stumps, up to 3" to 4" in diameter. Large units can also reduce concrete, steel drums, white goods and furniture.
Screw Shredders	Shredding is done by two parallel screws with opposing threads.	bulky wood material, including tree stumps, brush, logs, scrap lumber, clean wood, pallets, trees, yard trimmings.
Screening/ Separating Equipment	Screening is a unit operation used to separate mixtures of materials of different sizes into two or more size fractions by means of one or more screening surfaces.	
Grizzly Screen	Vibrating grizzly feeders are ideal for feeding rubble and mixed C&D material to the primary crusher.	rubble and mixed C&D material
Vibrating Screen	Vibrating screens can be designed to vibrate from side to side, vertically, or lengthwise.	
Trommel Screen	An inclined rotating cylindrical screen where material to be separated tumbles and contacts the screen several times as it travels down the length of the screen.	

Debris Management Programs

	EQUIPMENT	MATERIALS HANDLED
Disc Screen	Disc screens consist of parallel horizontal shafts equipped with interlocking lobed (or star-shaped) discs that run perpendicular to the flow of infeed material.	Wood
Air Classifiers	A separator which uses an air stream to separate materials based on the weight difference of the material.	Commingled waste (plastic, glass, paper, metal)
Flotation	A unit operation which employs water to separate wood from rubble-based material.	separate wood from rubble-based material
Magnetic & Electric Field Separation	Uses the electrical and magnetic properties of waste materials to separate them.	
Magnetic Separation	Designed to remove ferrous metals from a moving bed of material.	ferrous materials
Electrostatic Separation	High-voltage electrostatic fields can be used to separate nonconductors of electricity, such as glass, plastic, and paper, from conductors such as metals.	nonconductors such as glass, plastic, and paper
Eddy Current Separation	Separates non-ferrous metal (usually aluminum cans) from the waste stream by passing a current through the materials. These systems can be expensive.	
Manual Picking Station	An elevated platform with a conveyor and a catwalk along both sides of the conveyor. Manual sorting is done by removing specified items from the conveyor and dumping` them in the appropriate chute provided.	

Processing techniques - wood, concrete, and asphalt⁵

Table: The table below describes various processing techniques for wood, concrete, and asphalt.

Wood Processing	
Wood	<p>C&D wood waste can be processed according to the intended end use. Options can include:</p> <ul style="list-style-type: none"> ◆ chipping with a mobile chipper or grinder at the site where the waste is produced; ◆ hauling to a processing facility that accepts and processes wood waste only; or, ◆ delivering to a full-service processing facility where multiple types of C&D wastes are processed.
Non-wood waste:	<p>Non-wood wastes are first separated from the waste. If not source-separated, some facilities use flotation tanks to separate wood from non-wood material.</p>
Concrete and asphalt processing	
Concrete	<p>Portland cement concrete (PCC) is commonly called "concrete." Concrete is mostly made of aggregate; the cement serves to bind the aggregate together. Concrete can be crushed on-site and used immediately for aggregate base, or hauled to a crushing plant.</p>
Asphalt concrete processing	<p>Asphalt concrete (AC) pavement is commonly called "asphalt." Asphalt is mostly made of aggregate (94%); the asphalt binder serves to bind the aggregate together. Asphalt can be crushed on-site, mixed with crushed concrete, and used immediately for aggregate base, or hauled to crushing plant.</p>

☐ **STEP 10: CHOOSE A METHOD OF OPERATION**

Method: Choose a method of operation for the selected program.
Decide the following in advance:

- ◆ who will implement the program;
- ◆ will the material be source separated at the curbside, placed in bins, roll-off containers;
- ◆ how will collection routes be established;
- ◆ who will collect the materials; and
- ◆ how will materials be identified for collection (GIS, pick-up crews drive through neighborhoods, hotline).

Who implements: Determine who will implement the diversion programs: city or county staff or contractors.

Example: Special Engineering Organization.

After the 1994 Northridge Earthquake, the Mayor and City Council decided that City forces could handle the recovery operations at a cost savings as compared to contracting out for the recovery work. In response, the City of Los Angeles' Department of Public Works implemented an earthquake debris removal program. The program was led by the Bureau of Engineering, with support from the Bureau of Contract Administration, which provided field monitoring of contractors, and the Bureau of Sanitation, Integrated Solid Waste Management Office, which directed the recycling efforts.

Engineering organization: Within the Bureau of Engineering, the Northridge Earthquake Recovery Division was created. Staff from various Divisions within the Bureau were assigned to the new ad hoc division and assumed responsibilities for different aspects of the earthquake recovery. After the work was completed, the Division was subsequently disbanded.

Advantages: Establishing this Division aided in the City coordinating all earthquake-related activities and simplified FEMA billing for disaster-related costs. In this way, the City could document that all activities performed by this Division were earthquake related and therefore reimbursable by FEMA.

Example

Alternatively, the City of Oakland let a master contract for **master contract:**debris removal and recycling. Such a contract can expedite clean-up and allows for traffic control and coordinated restoration of utilities. The latter keeps utilities from being continually re-damaged by heavy loads of debris. Wear and tear on roads is also eligible to be reimbursed as part of the master contract.

Critical issues need to be resolved if a master contract is used:⁶

- ◆ who pays - insurance, local government, property owner, state or federal?
- ◆ who assumes liability?
- ◆ what if property owners don't want to participate?

City of Los Angeles:

The City of Los Angeles adopted the following operational approach to maximize recycling of curbside debris:⁷

- ◆ **Contract language.** To achieve recycling goals, collection contracts included language indicating that the City required recycling, and that contractors were expected to utilize recycling facilities under City contracts in a particular order of preference.

The inspectors listed the facilities in an order which required that contractors use recycling facilities first. Contractors were permitted to utilize disposal facilities only when recycling facilities were closed, temporarily over capacity, or had waiting times which would have inhibited efficiency of collection operations.

- ◆ **Authorization letters.** Authorization letters to utilize facilities under City contract were distributed to contractors and included the recycling preference. Carbon copies were returned to the site inspector allowing immediate load tracking capability (see Attachment E for copy of letter).

The City developed authorization letters that the haulers used in lieu of paying the tipping fee at disposal and recycling facilities. The authorization letter allowed the facility to bill the City directly and benefited the hauler who did not have to pay the fee and wait for reimbursement from the City. It also ensured that the contractors would use recycling facilities, since there was no cost to them.

- ◆ **Recycling plans.** Contractors selected for contract awards were required to submit recycling plans at the time of contract signing. They were trained at the time of contract signing and provided with training booklets for their field staff regarding program guidelines and facility requirements before starting work (*Northridge Earthquake Recycling Requirements for Contractors*).

- ◆ **Performance criteria.** Performance criteria were used to rate contractors on their good faith efforts to recycle and their actual recycling rates. Points were given to the contractor if:

- ◆ they dedicated trucks for recycling,
- ◆ their field supervisors were trained regarding City recycling requirements, and
- ◆ the contractor's supervisors scouted for concentrations of recyclables each day.

Recycling rates in the form of percentage of loads to recycling facilities were tabulated from the inspectors' daily status reports.

- ◆ **Monitoring and enforcement.** Field inspectors monitored the contractor's work and enforced recycling requirements in the field to maximize recycling without impeding efficiency of operations.
- ◆ **Valid permit.** Recycling facilities had to maintain a valid solid waste facilities permit and agree to City monitoring and evaluation guidelines to participate in the program.



STEP 11: ADAPT PROGRAM LENGTH

Set a limit:

Depending on the extent and severity of the disaster event, a jurisdiction will have set an estimated completion time for the diversion program to be implemented. In large part, this will be dependent on the program funding, particularly from FEMA, and on the volume of work to be performed.

Factors:

Several factors will influence the length of time the diversion program is needed. Consider these:

1. the extent and severity of the disaster;
2. program funding from FEMA;
3. the time between the disaster and when homeowners receive their FEMA insurance, or Small Business Assistance checks; and
4. if the disaster is a regional one, the ability of contractors to keep up with the heavy demand for their services.

Example:

In the case of the City of Los Angeles, the disaster debris was being picked up from households for 1-1/2 years after the Northridge earthquake. The City of Santa Clarita's curbside program lasted a year; it was initially thought the program would end after six months.

Peaks of waste generated:

From past disasters, it appears there will be three peaks where disaster debris is generated.

1. The first will be a large influx of debris immediately after the disaster event consisting of household debris and putrescibles as people begin the initial cleanup of their homes and businesses.
2. The second peak will occur approximately six to nine months after the disaster when homeowners begin to receive their FEMA assistance, insurance, or Small Business Assistance checks. This is when the debris is removed and rebuilding begins. Expect an influx of debris at this time.

3. The third peak will occur during the rebuilding phase, again when homeowners and businesses receive FEMA, insurance, or Small Business Assistance checks or when contractors become available. After these three peaks it appears that the collection of disaster debris levels out and that the disaster wastestream will become steady and last upwards of 1-2 years, depending on the severity of the disaster.

FEMA deadlines:

Keep in mind that FEMA sets a completion deadline of six months on debris removal projects. If a jurisdiction needs a time extension, it must apply for one through the Office of Emergency Services. (Refer to Chapter 16, Federal Assistance Program, for additional information).

Suggestion:

To ensure that program funding from FEMA continues uninterrupted, review your program progress after four months to determine if a time extension or additional funding is needed. If more time or funds is needed, this will give you two months' lead time to process the request so that funding is not cut off before the program ends.

Local criteria:

Develop local criteria to determine if your jurisdiction needs to request a time extension to complete the work and to request additional funding from FEMA. The criteria can include such items as:

- ◆ daily loads
- ◆ tonnages;
- ◆ number of demands for debris pickup from the public; and
- ◆ number of requests for earthquake-related building permits.
 - ◆ to differentiate between earthquake-related work and regular construction activity, the City of Los Angeles instituted a tracking system whereby a different numbering system was used for earthquake-related building permits.

☐ **STEP 12: DEVELOP FUNDING OPTIONS**

Reimbursement: To initiate its recovery efforts, a jurisdiction must be knowledgeable about the state and federal reimbursement programs and the process for requesting funding.

Because Federal Emergency Management Agency (FEMA) typically reimburses program costs, not advances them, a jurisdiction will need to identify funds to start-up programs until federal funding becomes available.

Small projects: FEMA will advance funding for "small projects " as contained in individual Damage Survey Reports. For "large projects," funding occurs as a reimbursement. Consult with OES regarding the dollar amount associated with each category type as it is tied to the Consumer Price Index.

Actions to take: This following actions will assist in identifying funding sources to start-up diversion and/or recovery programs.

- ◆ Identify local or private funds that can be used to start program until receive FEMA reimbursement.
 - ◆ determine ability to use General Fund;
 - ◆ evaluate possibility of acquiring a loan; and
 - ◆ explore use of private funds.
- ◆ Prepare documentation re local policy for diversion/recycling.
- ◆ **NOTE: FEMA may/will not reimburse for donated monies or services.**

Documentation: Research documentation for FEMA regarding existing local policy for recycling or diversion.

FEMA's policy to date has been to reimburse for the "least cost" programs, and reimburse for diversion programs if they are in keeping with an existing policy of the jurisdiction.

However, the jurisdiction must document such policies, provide adequate documentation to FEMA, and receive their approval prior to implementing the diversion program in order to receive reimbursement.

Do in advance:

Compiling this information in advance can save valuable time in receiving approval to proceed with the diversion programs and to begin the recovery process.

STEP 13: ESTABLISH A PUBLIC INFORMATION PROGRAM

Background:

A diversion program can only be effective if it is supported by good public information or outreach program. An effective public information program will realize two goals: provide adequate advertisement of the debris collection program as well as educate the residents and contractors involved in carrying out the program.

Unless this program is taken seriously and resources applied to implement it, plans to recycle and otherwise divert the disaster debris may go unrealized.

Steps to take:

Based on the experiences of other local jurisdictions that have undertaken disaster recovery programs, following are some suggestions in establishing your public information and outreach program.

- ◆ Coordinate with the city/county public information officer (PIO) in development of a public awareness campaign for the debris management programs.

This can include Public Service Announcements (PSAs) on the radio and TV, printed materials such as doorhangers and newsletters, to advertise locations of drop-off centers, conditions of curbside collection, hours, materials accepted, collection method, etc.

- ◆ Structure a public information campaign so that messages reach target groups at home, at work, and at leisure.
- ◆ Establish a public information or media center to handle debris management questions from the public.
 - ◆ cleanup instructions;
 - ◆ status of cleanup;
 - ◆ respond to public inquiries;
 - ◆ locations of drop-off or collection sites;
 - ◆ how to source separate;
 - ◆ enforce provisions against illegal dumping; and

Debris Management Programs

- ◆ complaints re debris piles or illegal dumping via a geographic information system (GIS).
- ◆ Develop contact list for the media: television, radio, cable access, ham operators, newspapers, neighborhood newsletters.
- ◆ Set up a hotline for the public to call regarding debris management programs and/or for debris pickup.
- ◆ The Public Information Officer (PIO) may be responsible for hosting the media and visitors at the disaster area.
- ◆ Identify all target groups, particularly those non-English speaking groups, and the geographical areas where they reside. OES can provide maps of the areas where different languages are spoken and the approximate number of speakers of each language.
- ◆ Determine need for interpreters and translators based upon above.
- ◆ Provide fact sheets to the public in English and predominant non-English languages in the area.
- ◆ Develop a Public Information Plan or Public Information Mutual Aid Agreement. Contact your nearest OES Regional Office for more information..
- ◆ Consider setting up a mobile information center.

Example:

Take into account that changes in policies and programs may well affect your diversion program. The City of Los Angeles used the Good Year Blimp in January 1995 to advertise to City residents that the earthquake pickup program had ended.

This was an innovative approach to getting the word out to the public; however, FEMA subsequently extended the debris program for six months. Another idea could include

renting a small plane with a banner to advertise the programs.

Regional cooperation:

Costs for advertising in the media can be prohibitive, yet using the media can be the best way to notify as many residents as possible about the diversion programs and how to participate in them. The City of Los Angeles was quoted a price of \$16,000 for a one-day 1/4 page ad in the *Los Angeles Times* to advertise their curbside pickup program.

The City of Santa Clarita was also implementing a curbside pickup program at the same time. A problem developed when Santa Clarita residents assumed the instructions in the *Times* for the City of Los Angeles programs applied to their local program. To avoid confusion, the City of Santa Clarita changed a number of its program guidelines to be consistent with those of the City of Los Angeles.

Had the cities been able to combine their efforts by establishing similar program guidelines and advertising their programs jointly, not only could they have saved money, but there would have been less confusion about the two curbside programs.



STEP 14: DEVELOP A MONITORING AND ENFORCEMENT PROGRAM

It's a must:

Monitoring is the key to achieving success in any diversion or recycling program. Monitoring will help a jurisdiction evaluate and enhance recycling facility capacity, assess the effectiveness of contractor training, improve enforcement by inspectors, and manage program costs. Following is a list of actions that will support a successful diversion program.

- ◆ garner the support and cooperation of those in authority to institute the monitoring program;
- ◆ dedicate sufficient resources to ensure program success;
- ◆ develop methods to monitor and enforce recycling/diversion guidelines;
- ◆ establish guidelines for compliance and incorporate as part of contract; and
- ◆ develop tracking system to verify amounts and types of materials diverted and disposed to document FEMA reimbursement and to calculate recycling rates.

Inspection and Control System

Inspection system:

Local jurisdictions should maintain an inspection and control system under its own supervision to ensure that the work being performed complies with the terms of the contract.

Factors to consider:

In addition to load ticketing, consider the following factors in the inspection and control process:

- ◆ bond requirements;
- ◆ insurance requirements;
- ◆ rights-of-way and indemnification;
- ◆ mobilization of proper equipment;
- ◆ posting of permits;
- ◆ contractor personnel safety standards;
- ◆ general public safety standards;

- ◆ completion schedules;
- ◆ clearance procedures; and
- ◆ demobilization procedures.

Progress reports:

It is important that the contract requires submission of reports and payment estimates, in order to aid in the evaluation of the contractor's work progress.

In lieu of progress reports, frequent visits to the job sites can be a productive method of monitoring performance.

Incentives:

Inspectors, or incentive programs, are needed to ensure that full loads are taken to the processing facilities rather than half empty trucks. Consider an incentive for a hauler to completely fill a truck before going to the disposal/recovery facility (i.e., pay by weight), rather than paying haulers per trip. However, paying by trip may be necessary in order to offer an incentive to haul low density materials such as wood and insulation.

Oversight:

In addition, continual oversight by inspectors is needed to ensure that the hauler goes to the preferred facility (e.g. recycling) and that the crews loading the debris use material separation techniques.

Contractor

The City of Los Angeles experienced significant increases **performance:** in the overall recycling rate in 7/94 due to the introduction of a contractor performance rating system. This gave contractors an incentive to take loads to source separated facilities. The introduction of this system increased source separated facility usage by 191% and significantly decreased recycling tipping fee costs. (Refer to Step 8, method of operation, for additional detail on the performance rating system).

☐ **STEP 15: DEVELOP A CONTINGENCY PLAN**

Roadways or

In the event that major roadways are closed or landfills and **facilities impacted:** recycling facilities are closed or damaged, develop a contingency plan to deal with the disaster debris until such time as the roads and facilities are open.

- ◆ Develop a procedure for temporary storage of the collected materials (refer to Chapter 4, Temporary Storage Sites, for more information).
- ◆ Develop a policy to deal with putrescibles and with waste from the public until a diversion program is implemented. Because this will likely be the responsibility of the local sanitation department, coordinate closely with that department.
- ◆ If the landfills you use are closed, make arrangements with neighboring jurisdictions or, if applicable, private landfill owners to use their facilities. Do this before a disaster strikes since it may take valuable time to negotiate the agreement and receive approvals, particularly from the local government governing body.
- ◆ Develop alternate transportation routes.
- ◆ Decide in advance how to fund programs initially, since FEMA operates on a reimbursement system.
- ◆ Fewer contractors/haulers may be available if a disaster hits a large geographic area or very populous area. Some options can be to:
 - ◆ identify contractors in the area who have the abilities and equipment to handle the work;
 - ◆ of those contractors identified above, identify those who can respond in an emergency; and

- ◆ pre-qualify contractors to expedite the contracting process and disaster response from within and outside the area;
 - ◆ When developing a list of pre-approved contractors, update the list every six to 12 months. At the same time, check to see that the contractors are holding the appropriate licenses and that those licenses are valid.
 - ◆ **Note:** Contractors will have to show proof of worker's compensation and liability insurance before entering into a contract. The local jurisdiction's risk manager will have to determine the minimum levels of coverage. **Verify with OES/FEMA that insurance premiums are reimbursable.**
- ◆ negotiate with your franchise hauler to handle the influx of disaster debris; or
- ◆ require, through a disaster clause in the franchise agreement, that the franchise hauler make all necessary arrangements to handle the waste, giving priority to waste diversion.
- ◆ Develop guidelines for residents and businesses who are cleaning up their property independently of the city/county-sponsored program, e.g., permits needed, how to choose a contractor, dealing with asbestos, etc.
- ◆ Consider including a provision in debris removal contracts requiring the contractor to develop markets for recycling and reuse for collected materials. While the jurisdiction relinquishes ownership of the materials to the contractor as well as any revenues realized from the sale of the materials, the responsibility for

finding markets for the materials will be that of the contractor.

- ◆ Develop a method to keep disaster-related debris separate from disaster debris. Commingling the two wastestreams may compromise the jurisdiction's ability to receive reimbursement for the diversion program. As an alternative, set up separate contracts for disaster debris and non-disaster debris and keep separate records for each.
- ◆ This was not possible in the City of Los Angeles' Northridge earthquake program. Many victims were still removing earthquake debris while others were rebuilding. There was often no clear end to one activity before beginning the other.

☐ **STEP 16: PURSUE REGIONAL COORDINATION**

Coordinate with neighbors:

Consider developing a debris management program in concert with neighboring jurisdictions to direct a coordinated disaster response, to save time and resources, and to provide services to all affected residents. This will necessitate coordination with the OES and FEMA to correctly allocate program costs and reimbursement to the appropriate jurisdiction, but a more efficient program can be achieved.

Program crosses boundaries:

Particularly in urban developments, debris management programs can cross jurisdictional boundaries. Instead of each city establishing a separate, and perhaps conflicting, program for its residents, it would benefit all if they pooled their resources and established a single response (program) that would meet the needs of all affected residents.

Example:

Problems arise when not all cities in a geographic area affected by the disaster establish a debris collection program. For example, City X had a successful curbside pickup program which was achieving a high degree of diversion. A neighboring city, however, did not implement a diversion or collection program for its residents. As a result, residents of the neighboring city would haul their disaster debris to the city with the collection program and place it on the curb.

Problems encountered:

This subsequently became a significant problem for City X. Residents of the neighboring city were not adhering to the program guidelines of source separation at the curbside and collection of designated materials. As a result, the contamination of curbside materials increased significantly and reduced the diversion potential of the materials.

Example:

It is also a good idea to coordinate programs with neighboring communities, particularly in densely populated urban areas. For example, residents of the City of Santa Clarita participated in their city curbside collection program, but began following the instructions for the City of L.A. program as advertised in the *L.A. Times*, assuming that it applied to them. As a result, to reduce confusion, the City of Santa Clarita changed a number of their program components to be consistent with those of the City of L.A.

☐ **STEP 17: DEVELOP INCENTIVES FOR DIVERSION**

Incentive: The method that the City of Los Angeles found to have the most potential for success in ensuring that the high priority facilities (recycling) were visited first, involved some sort of incentive program.

If the drivers received a perk for adhering to the criteria, more material would be recycled and a great deal of money would be saved in the form of reduced tipping fees and reduced staff time dedicated towards policing cleanup crews and haulers.

Encourage diversion: Develop methods to encourage diversion. These can include the following ideas:

Methods to encourage diversion	
◆	No tipping fee, or reduced tipping fee, for recycling/reuse
◆	Penalties for disposing of disaster debris: Hauler, Landfill, Processor
◆	Local ordinances that would require applicants for permits for new construction and demolition to submit a waste management plan showing materials to be diverted or salvaged.
◆	Issuance of new construction and demolition permits with list of recycling facilities attached.
◆	Priority to siting new recycling facilities over permitting new disposal facilities.
◆	Ban on landfilling of, or adding surcharge to, reusable or recyclable materials (provided that facilities and markets are established).
◆	Provide local fee and tax credits for businesses that deal in salvaged and recycled building materials.

Example: After the Loma Prieta earthquake in 1989, the City of Santa Cruz waived the tip fee for materials taken to the landfill to encourage residents to recycle their disaster debris.

Example:

Noncompliance fees are also an effective incentive for diversion.

Prior to the City of Los Angeles instituting a non-compliance fee in their curbside hauling contract, two thirds of the contractors did not go to recycling facilities. After the noncompliance fee of \$400 a load was added to the curbside contract, the City reported that 29 of 30 contractors surveyed did use the recycling facilities. On average, the City employed 55 contractors for this work at any given time. A total of 361 contractors were used.

☐ **STEP 18: COMPILE DOCUMENTATION AND DEVELOP TRACKING SYSTEM⁸**

FEMA

Ensure that adequate documentation is maintained to support funding requests to the state and federal governments. Refer to the following document for guidelines on the kinds of documentation needed, which may in turn affect the tracking system used and the information collected. For more information on documentation, see Chapter 5, Contracts.

- ◆ Guidelines for Documenting Disaster Costs for Federal and State Public Assistance Programs (contained in Public Assistance Subgrantee Disaster Assistance Resource Manual, OES).

The tracking system can be used to:

- ◆ verify payment to haulers, facilities;
- ◆ document recycling rates;
- ◆ satisfy state and federal reporting requirements; and establish an audit trail.

Example:

For the City of Los Angeles, one of the conditions FEMA required when approving the City's proposal to implement a recycling program was the development of a system to document the level and effectiveness of recycling.

The City developed a database system to track the amount and type of tonnage delivered to each facility, facility cost, and truck type to deliver the debris.

The system included tonnage reconciliation and material composition information for each facility that processed mixed debris.

The system was based on data entered from each facility's daily load tickets.

Note: because of the significant number of tickets (200,000 total) and diversity of facility types, the system required six staff to maintain the database.

The load tickets from each recycling facility were collected daily. Information reported included tonnage, cost, truck type, and material data.

Recycling rate:

Once materials were processed at mixed recycling facilities, the materials shipped for recycling and residual trash tonnages hauled to landfills were compared with tonnage input from load tickets. This "reconciliation" served as the basis for development of recycling rates.



STEP 19: DEVELOP TRAINING PROGRAM

Training guide:

It is a good idea to provide training to contractors and haulers to ensure they understand the diversion program and will implement it. It is just as important to train inspectors and field personnel in diversion program components.

The City of Los Angeles developed a training guide entitled *Northridge Earthquake Recycling Requirements for C-21 Contractors* which lists the City's requirements, materials specifications, and recycling and disposal facilities. All haulers were given the manual and trained on program guidelines.

Educate haulers:

One of the most difficult aspects of the program may be educating the haulers on the preferable sites to haul the material to and then ensuring that they followed through on the instructions.

As an example, the City of Los Angeles placed recycling facilities in higher preference to mixed disposal facilities. However, the recycling facilities may not have been the most preferable facility in the hauler's mind. The hauler may have chosen a facility based on distance, familiarity, or absence of truck scales on route rather than recyclability of material or disposal cost since the City bore the brunt of these costs.

Prepare guidelines for private haulers on recycling and diversion of C&D materials, facilities to use, and methods to reduce contamination of materials. One way to distribute this information is to do so when building permits are issued.

☐ **STEP 20: SET UP A RECORDS RETENTION SYSTEM AND ARCHIVES**

Set up system:

It is important to establish a records retention system for the disaster debris program. At the conclusion of the City of Los Angeles' Northridge earthquake recycling programs, the City had more than 200 archive boxes of contracts, invoices, recycling data, and other administrative records. The City stored these records in preparation for a FEMA audit. Further, a computer database was developed to track the location of the archive boxes and their contents.

Guidelines:

The City of Los Angeles suggested that a records retention system include the following:

- ◆ A filing system to assure that records are organized from program inception to completion.
- ◆ Guidelines for which agency will have long-term custody of the records, who will manage the filing system and records retention database, and who will arrange access to the records for future auditors and program staff after program completion.
- ◆ Guidelines for the types of records that will be retained and those that can be recycled at program completion.
- ◆ Space requirements are identified and plans for long-term storage of archives.
- ◆ A computerized records retention system to track location of materials for future audits.

☐ **STEP 21: PREPARE A FINAL REPORT**

Why needed:

A final report of program activities and results may be required for FEMA reimbursement for diversion programs implemented. This report allows jurisdictions to evaluate program success and areas for improvement and is crucial for future disaster debris planning purposes.

Example:

The City of Los Angeles prepared a Final Report, based primarily on its curbside collection program, entitled *Northridge Earthquake Response Effort: Recycling Activities for City Sponsored Earthquake Debris Removal Program, Final Report, 9/15/95.*

The Final Report's major topic areas are presented below as an example of the types of program information that should be collected.

- ◆ program goals;
- ◆ operational approach;
- ◆ facilities used;
- ◆ program monitoring;
- ◆ recycling rates achieved for both source separated recycling and mixed debris recycling;
- ◆ program costs for tipping fees: recycling and disposal facilities; contractors (C-21 for debris removal/loading, and trucking;
- ◆ landfill space savings;
- ◆ tonnage and % of materials sent to source separated and mixed facilities;
- ◆ tonnage and % of materials recycled and disposed of;
- ◆ recycling rates by material type;
- ◆ program costs by ton - recycling compared to disposal;
- ◆ demonstrated program effectiveness, and
- ◆ lessons learned and areas for improvement.

ATTACHMENTS

- A. Federal Debris Removal Criteria.
- B. Right of Entry Agreement; Waiver of Liability.
- C. City of Los Angeles Damage Survey Report for Recycling Program.
- D. City of Los Angeles Authorization Letter.
- E. CIWMB Fact Sheets.

REFERENCES

- ◆ Northridge Earthquake Response Effort, Final Report, pp. 5-6, Issue No. 7, City of Los Angeles, 9/15/95.
- ◆ Northridge Earthquake Recycling Requirements for C-21 Contractors, City of Los Angeles, Environmental Affairs Department.
- ◆ Debris Management Course, Reference Manual, Emergency Management Institute, FEMA.
- ◆ *Resource Recycling*, August 1993.
- ◆ *Integrated Solid Waste Management*, George Tchobanoglous, et al., 1993.

ENDNOTES

1. Debris Management Course, Reference Manual, Emergency Management Institute, FEMA, pp. 15-18.
2. Debris Management Course, Reference Material, Emergency Management Institute, FEMA, pages 17-18.
3. Debris Removal Guidelines for State and Local Officials, FEMA
4. *Northridge Earthquake Response Effort, Final Report*, City of Los Angeles, Integrated Solid Waste Management Office, Issue No. 7 (9/15/95), pg. 5.
5. Ibid.
6. Earthquake Recovery Manual, OES, Chp. 14, page 219
7. Northridge Earthquake Response Effort, pages 5-6, Issue No. 6, 7/11/95
8. City of Los Angeles Northridge Earthquake Response Effort, Final Report, Issue No. 7, 9/15/95.

CHECKLIST

CHAPTER 3 DEBRIS MANAGEMENT PROGRAMS

- ☐ **STEP 1: Make diversion programs a priority**
 - ◆ Provide management support and resources.
 - ◆ Give management and staff authority to act to in a disaster/emergency.

- ☐ **STEP 2: Become familiar with federal debris removal criteria and guidelines.**
 - ◆ To increase your jurisdiction's preparedness.
 - ◆ Will likely determine the type and scope of debris removal and diversion programs to be established during the recovery phase.

- ☐ **STEP 3: Develop a debris removal strategy.**
 - ◆ Divide debris removal operation into two phases:
 - ◆ Phase I - emergency roadway debris removal
 - ◆ Phase II - public right-of-way debris removal and diversion program strategies
 - ◆ Coordinate removal of debris
 - ◆ develop initial assessment of disaster;
 - ◆ establish contracted work force for expeditious debris removal;
 - ◆ coordinate with transportation agencies to ensure traffic control measures expedite debris removal activities;
 - ◆ evaluate damaged utility systems, buildings, public facilities.
 - ◆ Develop debris management strategies
 - ◆ establishment of programs for recycling and reuse of the disaster debris; and
 - ◆ monitoring of removal and diversion activities.

☐ **STEP 4: Identify project scope.**

- ◆ Define project area.
- ◆ Determine if jurisdiction will remove debris from private property.
- ◆ Develop an estimate of the types and quantities of debris to be removed.
- ◆ Select temporary storage, recycling, and disposal sites.
- ◆ Determine need for processing facilities.
- ◆ Determine whether existing processing and disposal capacity is sufficient for expected volumes of debris.

☐ **STEP 5: Select debris management program(s)**

- ◆ Select programs based on assessment factors
 - ◆ materials generated;
 - ◆ facilities available;
 - ◆ temporary storage areas;
 - ◆ haulers/processors, brokers;
 - ◆ processing requirements and barriers;
 - ◆ end-uses and markets for collected materials; and
 - ◆ local conditions.
- ◆ Consider most frequently implemented programs
 - ◆ curbside;
 - ◆ building demolition; and
 - ◆ household hazardous waste.

☐ **STEP 6: Set program goals.**

- ◆ Determine recycling rate.
- ◆ Determine facility needs.
- ◆ Estimate costs for diversion.
- ◆ Increase private investment.
- ◆ Save landfill space.
- ◆ Do not charge tip fees.
- ◆ Enforce illegal dumping ordinances or regulations.

☐ **STEP 7: Identify labor needs**

- ◆ Estimate staffing requirements for diversion programs as part of staffing needed for overall recovery programs.
- ◆ List all possible sources for obtaining additional staffing
 - ◆ city/county staff from other agencies;
 - ◆ Human services agencies and non-profit organizations; and
 - ◆ volunteers.
- ◆ Enter into mutual aid agreements before disaster for staffing assistance.

☐ **STEP 8: Identify processing equipment needs**

- ◆ Compile a list of processing equipment needed to support selected diversion programs.
- ◆ Survey the following to identify the equipment available in the event of a disaster:
 - ◆ agency/department;
 - ◆ franchise hauler;
 - ◆ private sector; and
 - ◆ neighboring jurisdictions.
- ◆ List equipment needed in addition to what will be available.

☐ **STEP 9: Determine method of operation**

- ◆ Who will implement program:
 - ◆ city/county staff;
 - ◆ special engineering organization (city/county);
 - ◆ contractor.
- ◆ How will materials be collected:
 - ◆ curbside;
 - ◆ drop-off;
 - ◆ source separated;
 - ◆ bins;
 - ◆ roll-offs.
- ◆ Determine how collection routes will be established.
- ◆ Determine how materials will be identified:
 - ◆ geographic information system;
 - ◆ pick-up crews drive through neighborhood;
 - ◆ hotline for public.

- ◆ Possible approaches:
 - ◆ contract language;
 - ◆ authorization letter;
 - ◆ recycling plans;
 - ◆ performance criteria;
 - ◆ monitoring and enforcement;
 - ◆ valid solid waste facilities permit.

☐ **STEP 10: Adapt program length**

- ◆ Consider factors influencing program length:
 - ◆ FEMA timelines for completion of debris removal projects;
 - ◆ FEMA funding for programs in six month increments;
 - ◆ extent and severity of disaster;
 - ◆ time when residents/business receive insurance, FEMA and Small Business Assistance checks;
 - ◆ ability of contractors to keep up with demand for services;
 - ◆ delays in insurance, loan checks;
 - ◆ delays in repairs; and
 - ◆ extent of rebuilding.
- ◆ Develop local criteria to determine if time extension or additional funding is needed based on:
 - ◆ daily loads;
 - ◆ tonnages;
 - ◆ number of demands for debris pickup from the public; and
 - ◆ number of requests for disaster-related building permits.

☐ **STEP 11: Review funding options.**

- ◆ Identify local or private funds that can be used to start program until receive FEMA reimbursement.
 - ◆ Determine ability to use General Fund.
 - ◆ Evaluate possibility of acquiring a loan.
 - ◆ Explore use of private funds.
- ◆ Prepare documentation re local policy for diversion/recycling.
 - ◆ City Council//Board of Supervisors resolution;
 - ◆ debris management plan;
 - ◆ ordinance.

☐ **STEP 12: Establish public information program.**

- ◆ Set goals
 - ◆ advertise debris management programs to public;
 - ◆ educate residents and contractors about diversion programs.
- ◆ Coordinate with city/county public information officer to develop awareness campaign:
 - ◆ newspaper ads;
 - ◆ doorhangers;
 - ◆ neighborhood newspapers;
 - ◆ TV/radio;
 - ◆ Good Year Blimp.
- ◆ Establish public information or media center to handle debris questions from the public (mobile center).
- ◆ Develop contact list for the media
- ◆ Set up hotline for debris pickup and to answer questions about diversion programs.
- ◆ Identify all target groups and where they reside.
- ◆ Get maps from OES of geographic areas and languages spoken.
- ◆ Determine need for interpreters and translators.
- ◆ Check into sharing costs with neighboring jurisdictions for advertising diversion programs.
- ◆ Develop Public Information Mutual Aid Agreement.

☐ **STEP 13: Develop monitoring and enforcement program.**

- ◆ Garner the support and cooperation of those in authority to institute the monitoring program.
- ◆ Dedicate sufficient resources to ensure program success.
- ◆ Develop methods to monitor and enforce recycling and diversion guidelines.
- ◆ Establish guidelines for compliance and incorporate as part of contract.
- ◆ Develop tracking system to verify amounts and types of materials diverted and disposed to document FEMA reimbursement and to calculate recycling rates.
- ◆ Special monitoring issues:
 - ◆ site delays;
 - ◆ overweight trucks;

- ◆ excessively wet debris; and
- ◆ excessive dirt.

☐ **STEP 14: Identify program barriers.**

- ◆ blockage of major transportation corridors;
- ◆ closure of recycling or disposal facilities;
- ◆ lack of funding;
- ◆ lack of temporary storage areas (see Chp. 4);
- ◆ illegal dumping at temporary storage areas (see Chp 4);
- ◆ limited markets for targeted waste types;
- ◆ limited contractors available;
- ◆ residents, businesses, and other governmental; agencies cleaning up independently of the city/county-sponsored program;
- ◆ liability in carrying out program;
- ◆ waste generated as a result of rebuilding ;
- ◆ non-disaster waste;
- ◆ source separation vs. commingled waste;
- ◆ lack of mixed waste facilities; and
- ◆ coordination with CalTrans.

☐ **STEP 15: Develop a contingency plan.**

- ◆ Provide temporary storage of the collected materials.
- ◆ Develop policy to deal with putrescibles and with waste from the public until a diversion program is implemented.
- ◆ Make arrangements with neighboring jurisdictions or, if applicable, private landfill owners to use their facilities.
- ◆ Develop alternate transportation routes.
- ◆ Develop policy on how to fund programs initially until state and federal funding becomes available.
- ◆ Prepare list of contractors in the area who have the abilities and equipment to handle the work and can respond in an emergency.
- ◆ Prepare list of pre-qualified contractors to expedite the contracting process.
- ◆ Develop agreement with franchise hauler to handle the influx of disaster debris.
- ◆ Write disaster clause into the franchise agreement.

- ◆ Add provision in debris removal contracts requiring the contractor to develop markets for recycling and reuse for collected materials.

☐ **STEP 16: Pursue regional coordination.**

- ◆ Coordinate diversion programs with neighboring jurisdictions.
- ◆ Share costs in implementing diversion and public information programs.
- ◆ If coordinating program with neighboring jurisdiction(s), check with FEMA and OES to determine how program will be reimbursed.

☐ **STEP 17: Develop incentives for diversion.**

- ◆ No tipping fee, or reduced tipping fee, for recycling/reuse.
- ◆ Non-compliance fee for disposing of disaster debris: hauler, landfill, processor.
- ◆ Local ordinances requiring applicants for permits for new construction and demolition to submit a waste management plan showing materials to be diverted or salvaged.
- ◆ Issuance of new construction and demolition permits with list of recycling facilities attached.
- ◆ Establish priority of siting new recycling facilities over permitting new disposal facilities.
- ◆ Institute ban on landfilling of, or adding surcharge to, reusable or recyclable materials.

☐ **STEP 18: Set up accounting/tracking system for debris programs.**

- ◆ Verify payment to haulers, facilities.
- ◆ Document recycling rates.
- ◆ Satisfy state and federal reporting requirements and establish an audit trail.
- ◆ Prepare program documentation - evaluate recycling rate and operational issues.

☐ **STEP 19: Develop a training program.**

- ◆ Write program guidelines.

- ◆ Train contractors and haulers re diversion program guidelines.
- ◆ Develop guidelines for private haulers.

☐ **STEP 20: Set up records retention system and archives.**

- ◆ Include the following in a records retention system:
 - ◆ A filing system organizing records from program inception to completion.
- ◆ Guidelines for:
 - ◆ agency to have long-term custody of records,
 - ◆ who will manage the filing system and records retention database, and
 - ◆ who will arrange access to the records for future auditors and program staff after program completion.
- ◆ Guidelines for the types of records that will be retained and those that can be recycled at program completion.
- ◆ Space requirements and plans for long-term storage of archives.
- ◆ Computerized records retention system to track location of materials for future audits.

☐ **STEP 21: Prepare a final report of program activities and results.**

- ◆ May be required for FEMA reimbursement.
- ◆ Allows jurisdiction to evaluate program success and areas for improvement.
- ◆ Crucial for future disaster debris planning purposes.
- ◆ Examples of types of information to include in report:
 - ◆ program goals;
 - ◆ operational approach;
 - ◆ recycling and disposal facilities used;
 - ◆ program monitoring;
 - ◆ recycling rates;
 - ◆ program costs for tipping fees;
 - ◆ landfill space savings;
 - ◆ tonnage and percentage of materials sent to source separated and mixed waste facilities;
 - ◆ tonnage and percentage of materials recycled and disposed of;

Checklist

Debris Management Programs

- ◆ recycling rates by material type;
- ◆ programs costs by ton (recycling vs. disposal;
- ◆ demonstrated program effectiveness; and
- ◆ lessons learned and areas for improvement.

CHAPTER 4

TEMPORARY STORAGE (Pre-staging) SITES

Background:

Local governments have identified temporary storage sites as the primary obstacle in establishing a debris management program. Without the ability to stockpile or store the disaster debris until such time as a jurisdiction can turn its attention to processing and marketing the materials, the debris is probably destined for the landfill.

Securing storage sites is best done before a disaster so that arrangements, such as leases and permits for the land, can be accomplished quickly. Given that the immediate response is for lifesaving activities, recycling and diversion programs often become secondary in importance. Having storage sites available in advance gives a jurisdiction additional time to develop diversion strategies and programs to handle the disaster debris.

Contents:

Take the following steps to establish a temporary storage site.

Error ! Book mark not defined.St ep	Topic	Page
1	Determine the need for temporary sites.	4-4
2	Develop criteria to evaluate potential sites.	4-5
3	Identify temporary storage sites.	4-7
4	Review Emergency Waiver of Standard Regulations.	4-8
5	Identify permits or variances required to site a temporary storage site.	4-10
6	Perform environmental review of site.	4-12
7	Develop a Site Development and Operation Plan.	4-13

Temporary Storage Sites

8	Prepare Inspection and Site Management Guidelines.	4-15
9	Prepare a Site Restoration Plan	4-16

General Considerations

Suggestions:

Here are some suggestions to consider in deciding whether to establish a temporary storage site. These are general program considerations that are discussed in more detail in the following steps 1-8.

- ◆ **Consider the availability of processing, recycling, and disposal facilities in the area.** Before a disaster, prepare an inventory of facilities in the area to help determine the need for facilities and to identify those materials which are worth stockpiling and those that probably should be disposed of in a timely manner. The inventory can include factors such as:
 - ◆ existing facilities in the area: source separated, mixed recycling, and disposal;
 - ◆ facilities in neighboring jurisdictions;
 - ◆ materials handled;
 - ◆ processing capacity;
 - ◆ remaining disposal capacity of a disposal facility;
 - ◆ on-site recycling facilities; and
 - ◆ expected storage capacity for disaster debris.
- ◆ **Review the CIWMB emergency waiver of standard regulations.** The emergency waiver of standard regulations allows local enforcement agencies to issue emergency waivers to solid waste facility operators upon request, in the event of a declared state or local emergency. (See section 4 of this chapter for more information).

The waiver grants an operator temporary relief from specific state minimum solid waste standards or terms or conditions of the operator's solid waste facilities permit. A waiver can also be granted to an operator for the establishment of a locally-approved temporary transfer or processing site, if authorized by the local enforcement agency. (See Attachment A for the text of the emergency waiver regulations).

- ◆ **Use temporary storage sites as a last resort.** One can save time and money by taking the materials directly to a recycler/processor and paying for transportation and labor only once.
- ◆ **Using a temporary site may increase costs significantly** if it is used as an intermediate step between clearing the streets and processing/recycling the materials.
 - ◆ FEMA and/or OES may not pay to move the debris twice. If considering this alternative, check with FEMA and OES before establishing the site in order to receive prior authorization.
- ◆ **Consider that there will be costs involved in setting up and closing a temporary site,** and take these into account when estimating the overall program costs.
- ◆ **Consider setting up a site for specific materials,** e.g., those that do not have a significant threat to public health and safety such as concrete, asphalt, brick, metals, dirt, etc.
- ◆ **Start a public education program immediately** to notify the public and contractors of the site, the materials accepted, hours of operation, etc.
- ◆ **Clearly mark the temporary storage area** and post signage so that residents and contractors know the site boundaries and its purpose.
- ◆ **Develop a policy and/or enforcement program** to discourage and prevent illegal dumping, vandalism, and contamination of materials.
 - ◆ Fence the area so prevent illegal dumping and provide some level of security.
 - ◆ Cordon off nearby streets to discourage nuisance or illegal dumping.

☐ **STEP 1: DETERMINE NEED FOR TEMPORARY STORAGE SITES.**

Debris generated: The information gathered during the preliminary damage assessment immediately after the disaster should give a good indication of the types and amounts of debris to be handled. (See Chapter 16, Federal Public Assistance Program, for a discussion of damage survey assessments).

Based on this information, a jurisdiction should be able to determine whether the existing recycling facilities and landfills have sufficient capacity for the expected volumes of debris. If sufficient capacity is not available, a jurisdiction will need to make other plans, which can include the following:

- ◆ expanding existing recycling, processing, or disposal facilities to handle the increased demand;
- ◆ hauling to intermediate sites and reducing the amount of debris through recycling;
- ◆ siting a temporary storage area at a landfill, vacant lot, etc. for recycling operations; and
- ◆ establishing new recycling, processing facilities.

☐ **STEP 2: DEVELOP CRITERIA TO EVALUATE POTENTIAL SITES¹.**

Consider the following in developing criteria for potential temporary storage sites:

CRITERIA	PURPOSE
Length of storage time	Set up a site for a specific duration. If the site is used for too long a time, residents may start regular dumping, and illegal dumping may become an issue.
Truck size	Smaller trucks require more trips for a given volume of debris which increases the driver's time, fuel cost, maintenance and depreciation cost.
Real estate costs	Take into account the cost for leasing public or private land. In some cases, particularly in areas with high real estate costs, establishing a site may be prohibitive when weighed against the cost to collect and recycle the materials.
Location	<p>A centralized processing and storage site may be a more efficient one as it can reduce transportation, equipment, and handling time, thereby minimizing costs.</p> <p>On the other hand, proximity to residences and businesses may pose a nuisance depending on the type and amount of traffic, noise generated, etc.</p>
Site size	<p>Sufficient area for the processing equipment and for the trucks to turn around in.</p> <p>Sufficient area to keep materials segregated to avoid contamination and to place materials that require special handling and transportation to a more appropriate recycling or disposal site.</p>
Site operations	Determine the types of activities to be conducted at site: storage only, processing, etc.
Site capacity	<p>Estimate the site capacity for projected amounts of materials. This includes the following:</p> <ul style="list-style-type: none"> ◆ amount of incoming materials, length of time they can be stored prior to processing, and site space needed; ◆ amount of outgoing materials that can be stored after processing, length of time, and site space needed.
Condition of materials	Source separate materials at the point of generation and ensure

CRITERIA	PURPOSE
	that they remain separated throughout the collection, transportation, and processing phases. This will reduce contamination of the materials and increase their diversion potential. It also helps minimize problems in processing the materials.
Sites for designated materials	Consider setting up sites that handle certain designated materials only, such as inerts-- concrete, bricks, metal, dirt, etc. since they can pose less of a health and safety threat. This strategy can facilitate the collection and processing of materials.
Equipment needed	The availability of equipment needed, such as graders, skip loaders, tracked vehicles, may dictate some aspects of site choice.
Security and signage	<p>Fence the area to prevent vandalism and illegal dumping. Cordon off nearby streets to discourage nuisance or illegal dumping.</p> <p>Post signage that clearly identifies the temporary storage area, its operating hours, types of materials accepted and prohibited, and contact person.</p>
Ease of accessibility	<p>Single lane unpaved access roads increase cost as a result of delays due to restrictions required to allow loaded and empty trucks to pass. In addition, poor weather conditions may make the access road impassable.</p> <p>Access roads are sufficient in number and size.</p>
Traffic conditions	Hauling over heavily traveled streets and roads also increases labor and equipment costs.
Roadway conditions	Poor roadway conditions, i.e., potholes, unpaved surfaces and deteriorated pavement, will increase maintenance costs as well as operational costs.
Length of haul	Estimate the distance from the disaster area. The longer the haul, the greater time required to reach the temporary storage site. This can mean an increase in the cost for labor and equipment.



STEP 3: IDENTIFY TEMPORARY STORAGE SITES FOR DISASTER DEBRIS

List sites:

Prepare a list of potential temporary storage sites based upon the type and amount of materials projected to be

collected, processing techniques, and transportation constraints.

Check on available public and private sites for use as temporary storage, recycling, or disposal sites. Explore the possibilities of using city/county-owned land, state lands, and private property. Private property will probably be the last resort given the liability associated with this.

Examples:

Examples of sites to consider include the following:

- ◆ recycling facility;
- ◆ landfill;
- ◆ transfer station;
- ◆ vacant lot;
- ◆ corporation yard;
- ◆ parks;
- ◆ parking lot;
- ◆ right-of-way;
- ◆ city/county-owned property; and
- ◆ private property.

Site at existing facility:

It may be more feasible to site a temporary storage area at a facility that has an existing solid waste facilities permit (SWFP), if there is space and if the activity is covered in the facility's existing SWFP. This would preclude the facility's owner/operator from having to modify or revise the SWFP to include this activity. Contact the facility's owner/operator and the Local Enforcement Agency to discuss the possibility of using the facility as a temporary storage area.

☐ **STEP 4: REVIEW EMERGENCY WAIVER OF STANDARDS REGULATIONS**

Purpose: The emergency waiver of standard regulations allows local enforcement agencies to issue emergency waivers to solid waste facility operators upon request. The waiver grants an operator temporary relief from specific state minimum solid waste standards or terms or conditions of the operator's solid waste facilities permit.

Waiver for: The waiver applies to the following:

- ◆ origin of waste;
- ◆ the rate of inflow for storage, transfer, or disposal of waste;
- ◆ the type and moisture content of solid waste;
- ◆ the hours of facility operation; and
- ◆ the storage time before transfer or disposal of wastes, at a solid waste facility.

A waiver can also be granted to an operator for the establishment of a locally-approved temporary transfer or processing site, if authorized by the local enforcement agency.

How to obtain: To obtain a waiver, a solid waste facility operator must submit a written request to the local enforcement agency. The waiver request must at a minimum include the following information:

1. a listing of the existing solid waste facilities permit terms and conditions to be waived in order to facilitate recovery and disposal of disaster debris;
2. a statement of the remaining disposal capacity of the solid waste disposal facility at the time of the request;
3. a description of all facility-related diversion programs and on-site recycling facilities; and,

4. a listing of locally-approved temporary transfer or processing sites to be used to store disaster debris for future reuse or recycling.

Findings:

The local enforcement agency may grant a waiver to an operator during a proclamation of emergency upon making the following findings:

1. the operator applying for the waiver holds a valid solid waste facilities permit;
2. the waiver will not pose a threat to public health and safety of the environment; and,
3. the operator identifies and implements, to the extent feasible, diversion programs to maximize diversion through reuse, recycling, or composting of disaster-related waste.

LEA notification:

Within seven days of receipt of the solid waste facility operator's request for a waiver, the local enforcement agency will notify the operator in writing whether or not the request for waiver has been granted.

Effective period:

If a waiver is granted the effective period of the waiver cannot exceed 120 days unless extended by the local enforcement agency.

Suggestion:

Consult with the local solid waste facilities operator and the Local Enforcement Agency regarding the need for and feasibility of establishing a temporary storage or processing area to handle the disaster debris.

Reference:

Specific emergency waiver of standards requirements are in the California Code of Regulations, Title 14, Division 7, Chapter 3, Article 3, sections 17210 through 17210.9. The regulations are found in Attachment A.

☐ **STEP 5: IDENTIFY THE PERMIT(S)/VARIANCES REQUIRED TO SITE A TEMPORARY STORAGE SITE.**

Identify agencies: Identify the agencies responsible for issuing the permit/variance and the time needed to process them. For example the following agencies may all have some level of permit requirement for temporary storage sites.

Agency	Type of Permit Issued
Local Enforcement Agency	may exempt certain type of facility from requirement to obtain permit; inspects waste hauling vehicles and sites
City/County Planning Department	issues land use permits; zoning changes; ordinances
Air Quality Management District	issues permit on air emissions
Regional Water Quality Control Board	issues waste discharge requirements
Department of Toxic Substances Control	regulates asbestos remediation/disposal, lead and HHW; issues permits for HHW temporary and permanent facilities
Integrated Waste Management Board	Concurs in issuance of a SWFP.
Fire Department	issues permits for storage of materials in piles. permit includes height, width, fire protection necessary on site road access and water storage

Example: The City of Santa Clarita secured a 40-acre site of private land for stockpiling and processing the disaster debris from the Northridge earthquake. The disaster debris was defined as broken concrete, asphalt, block wall, rubble, masonry, cinder block, clay brick, and metals, construction attached to masonry (rebar), scrap metal, and wood waste.

The local permit for the Santa Clarita site is found in Attachment B.

Local authority: A city or county can use its authority to pass local ordinances in order to establish temporary storage sites.

This is one option available in the absence of a requirement to obtain a solid waste facilities permit for the site.

Actions to take:

After reviewing its existing land use ordinances, a jurisdiction can consider taking the following action(s):

- ◆ relax storage requirements at the site;
- ◆ exempt certain discretionary actions from the California Environmental Quality Act; or
- ◆ waive storage standards at a particular site for emergency storage if it is less than X cubic yards, depending on the local conditions.
- ◆ Or, the jurisdiction, through its zoning and land use authority, can establish such temporary storage areas by passing a new ordinance in response to the emergency.

Pre-approved waiver:

Consider the use of a pre-approved waiver in siting temporary storage areas. This is a process whereby a jurisdiction identifies selected sites for use as temporary storage areas and then obtains a permit/waiver for each site in advance of a disaster.

A jurisdiction could activate the permit under certain conditions (such as in the event of a disaster) thereby having immediate access to a temporary storage site for disaster debris. This process can speed up the recovery time by giving the jurisdiction additional time to develop its debris management strategy and programs.

CIWMB tiered permitting:

The CIWMB is undergoing a review of its permitting process and is establishing "tiers" for facilities that will require a permit less than the "full" solid waste facility permit that now is issued through the Local Enforcement Agency and concurred in by the Board.

As this document went to print, the placement of transfer/processing stations into tiers was not complete.

It is advised that a jurisdiction contact its Local Enforcement Agency to determine the permits, if any, required to establish a temporary storage site.

Temporary Storage Sites

For information on the tiered permitting process, contact the CIWMB at 916-255-2453.

☐ **STEP 6: PERFORM AN ENVIRONMENTAL REVIEW OF THE SITE.**

Baseline assessment:

Once a site is selected, perform an environmental assessment on the site before the debris is deposited. This baseline assessment is necessary so that the site can be restored to its original condition after the disaster debris is finally removed and to determine liability in the case of site contamination.

Develop an environmental monitoring plan to include testing for contamination. A jurisdiction should be aware of its liability in storing disaster debris on private land in particular.

Checklist:

Conduct baseline assessment, using a baseline data checklist below:²

Phase	Actions to Take
Before activities begin	<ul style="list-style-type: none"> ◆ take ground or aerial video/photographs ◆ note important features, such as structure, fences, culverts, and landscaping ◆ take random soil samples ◆ take water samples from existing wells ◆ check the site for volatile organic compounds
After activities begin	<ul style="list-style-type: none"> ◆ establish groundwater monitoring wells ◆ take groundwater samples ◆ take spot soil samples at household hazardous waste, ash, and fuel storage areas ◆ take spot soil samples at household hazardous waste, ash, and fuel storage areas
Progressive updates	<ul style="list-style-type: none"> ◆ update videos/photographs ◆ update maps/sketches of site layout ◆ update quality assurance reports, fuel spills, etc. ◆ update quality assurance reports, fuel spills, etc.

Water runoff:

Make note of any nearby surface water, such as lakes, streams, drainage channels, which might receive runoff from the site. A jurisdiction may want to create a berm in those areas to contain runoff from leaving the site and entering waterways. Also consider having water on site (or in tanks) for dust control, when accepting dirt for stockpiling.

☐ **STEP 7: PREPARE A SITE DEVELOPMENT AND OPERATION PLAN.**

Site development plan:

Prepare a Site Development Plan for daily and long-term operations. Haul routes, tipping areas, stockpile locations, and material processing should be coordinated under this plan. Items to be addressed include a description of the site and the activities to be conducted at the site:

Planning considerations:

- ◆ site identification;
- ◆ waste types and volumes to be received;
- ◆ site capacity, projected site life, and end use;
- ◆ vehicles - types and numbers expected;
- ◆ site access plan;
- ◆ enforcement provisions;
- ◆ public information awareness campaign to notify residents and contractors of sites and guidelines for use;

Operational considerations:

- ◆ unloading, loading and stockpiling;
- ◆ access and haul roads;
- ◆ operational difficulties;
- ◆ control of nuisance and health factors;
- ◆ health and safety provisions;
- ◆ general site and health and safety plan;

Recycling and reuse:

- ◆ salvaging and volume reduction activities;
- ◆ materials handling activities; and
- ◆ hazardous waste screening program.

Control of incoming material:

Inspect incoming loads to determine that materials are handled properly and directed to proper stockpile areas. Estimate quantities of incoming materials based on type of haul vehicle and its capacity.

Develop a contingency plan and procedures in the event hazardous waste are found in the incoming waste stream. Segregate hazardous wastes and transfer to a more appropriate recycling or disposal facility.

Segregate materials:

Segregate and store all recoverable materials in consolidated stockpiles in the major categories, such as:

- ◆ green waste;
- ◆ wood debris;
- ◆ aggregates;
- ◆ metals;
- ◆ white goods (refrigerators, washers and dryers, stoves);
- ◆ mixed demolition debris;
- ◆ brown goods: furniture and other bulky waste;
- ◆ plastics; and
- ◆ tires.

Keep materials as free from contamination as possible, as this will increase their diversion potential.

Keep the disaster-related wastes separate from other wastes, as commingling the two waste streams will compromise the recycling program's ability to receive FEMA reimbursement.

List prohibited materials.

White goods:

Segregate white goods from other metals because of potential presence of waste oils and coolants (chloroflourocarbons). State law prohibits the landfilling of white goods if salvaging is determined feasible by the solid waste facility operator.

Processing:

A number of processing functions will need to be performed to sort stockpiled materials, to store and handle them during processing, and to prepare them to meet market specifications.

The various materials categories will require different levels of processing. As a result, the equipment and technologies employed will change.

Refer to chapter 3, Debris Management Programs, for a discussion of processing techniques and equipment.

The availability of different types of equipment needed, i.e., graders, skip loaders, tracked vehicles, etc. may dictate some aspects of site choice.

☐ **STEP 8: PREPARE INSPECTION AND SITE MANAGEMENT GUIDELINES³**

Site management: Following are some suggestions of things to keep in mind when establishing a site:

- ◆ **Disaster Debris Manager.** Designate a city or county staff member as the site's disaster debris manager.

The disaster debris manager should serve as the overall supervisor of the site inspection operation and should coordinate storage, recycling, or disposal efforts with the affected local and state agencies, processors, recyclers, and landfill owners or operators.

- ◆ **Point of payment verification.** When unit price contracts are being utilized in long-term operations, the recycling or disposal site becomes the primary point for quantity verification utilized for payment.

Error! Bookmark not defined.If contract let on	Next step is
Unit price basis	the establishment of well organized and managed inspection stations near the entrance of the site
Weight basis	to make provisions for weighing trucks as they enter the site
cubic yard basis	to construct a stand or stands that allow for the inspection of loaded trucks

The number of inspection stands utilized at a site will be dictated by:

- ◆ the volume of debris to be removed,
- ◆ the number of access roads or lanes available, and
- ◆ the size of the site.

Weight tickets:

Develop a tracking system for weight or load tickets if they are used for payment verification.

Treat weight tickets as accountable forms. Track what forms have been issued, how many have been issued, and to whom. One way to do this is to have them sequentially pre-numbered.

☐ **STEP 9: DEVELOP A SITE RESTORATION PLAN.**

Restoration plan: It is important to develop a restoration plan for each temporary storage site that addresses:

- ◆ processing and removal of materials from the site;
- ◆ an environmental monitoring plan to include baseline monitoring and testing for contamination; and
- ◆ restoration of the site to its original condition. Note: If private land, final restoration must be acceptable to the landowner.

In this way, liability for site contamination can be mitigated by having a baseline environmental assessment performed before disaster debris is deposited at the site.

ATTACHMENTS

- A. Emergency Waiver of Standards Regulations.
- B. City of Santa Clarita permit for temporary storage site.

REFERENCES

- ◆ *Debris Management Course, Reference Manual*, Emergency Management Institute, National Emergency Training Center, FEMA.
- ◆ *Permit Desk Manual*, CIWMB.
- ◆ *Management of Debris Generated by Hurricane Iniki, Solid Waste Planning and Engineering for the County of Kauia, Task Reports 12/11/92.*
- ◆ California Code of Regulations, Title 14, Division 7, Chapter 3, Article 3, sections 17210 through 17210.9

ENDNOTES

1. Debris Removal Guidelines for State and Local Governments, FEMA, DAI-15 (Draft) December 1991, Modified.
2. Debris Management Course, Reference Manual, Emergency Management Institute, National Emergency Training Center, FEMA, pg. 38-39.
3. Debris Removal Guidelines for State and Local Governments, FEMA, DAP-15 (Draft) December 1991, Modified.

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CHECKLIST

CHAPTER 4 TEMPORARY STORAGE SITES

☐ STEP 1: DETERMINE NEED FOR FACILITIES

- ◆ Review preliminary damage survey results.
- ◆ Estimate types and quantities of debris to be handled.
- ◆ Determine if existing facilities have capacity for expected volumes and types of debris.
- ◆ Consider options to increase capacity:
 - ◆ expand existing facilities;
 - ◆ haul to intermediate sites and reduce through recycling;
 - ◆ establish new recycling, processing facilities; and
 - ◆ site temporary storage area.

☐ STEP 2: DEVELOP CRITERIA TO EVALUATE POTENTIAL SITES

- ◆ length of storage time;
- ◆ real estate costs;
- ◆ truck size;
- ◆ location;
- ◆ site operations;
- ◆ sufficient capacity;
- ◆ collection;
- ◆ security and signage;
- ◆ ease of accessibility;
- ◆ traffic conditions;
- ◆ roadway condition;
- ◆ length of haul; and
- ◆ equipment needed.



STEP 3: IDENTIFY TEMPORARY STORAGE SITES

- ◆ Prepare list of potential sites using criteria developed in step 2
- ◆ Consider range of sites:
 - ◆ recycling facility;
 - ◆ landfill;
 - ◆ transfer station;
 - ◆ vacant lot;
 - ◆ corporation yard;
 - ◆ parks;
 - ◆ parking lot;
 - ◆ right-of-way;
 - ◆ city/county-owned land; and
 - ◆ private property.



STEP 4: REVIEW EMERGENCY WAIVER OF STANDARDS REGULATIONS

- ◆ Local Enforcement Agency (LEA) can issue "emergency waiver of standards" to solid waste facilities operator upon request for:
 - ◆ temporary relief from specific state minimum solid waste standards or terms or conditions of solid waste facilities permit;
 - ◆ establish a locally-approved temporary transfer or processing site.
- ◆ Solid waste facility operator submits written request to LEA.
- ◆ LEA may grant a waiver upon making findings:
 - ◆ operator holds a valid solid waste facilities permit;
 - ◆ waiver will not pose a threat to public health and safety of the environment; and
 - ◆ operator identifies and implements, to the extent feasible, diversion programs to maximize diversion through reuse, recycling, or composting of disaster-related waste.
- ◆ LEA grants waiver for 120 days.



STEP 5: IDENTIFY PERMITS OR VARIANCES

- ◆ Identify agencies responsible for issuing permit/variance.
- ◆ Determine time needed to process permit application.
- ◆ Use local authority to designate temporary storage areas.
- ◆ Consider developing pre-approved waiver to site temporary storage areas.



STEP 6: PERFORM ENVIRONMENTAL REVIEW OF SITE

- ◆ Conduct baseline assessment, using baseline data checklist below:
 - ◆ Before activities begin
 - ◆ take ground or aerial video/photographs;
 - ◆ note important features, such as structure; fences, culverts, and landscaping;
 - ◆ take random soil samples;
 - ◆ take water samples from existing wells; and
 - ◆ check the site for volatile organic compounds.
 - ◆ After activities begin
 - ◆ establish groundwater monitoring wells;
 - ◆ take groundwater samples; and
 - ◆ take spot soil samples at household hazardous waste, ash, and fuel storage areas.
 - ◆ Progressive updates
 - ◆ update videos/photographs;
 - ◆ update maps/sketches of site layout; and
 - ◆ update quality assurance reports, fuel spills, etc.
- ◆ Develop environmental monitoring plan.
- ◆ If using private property, have landowner sign liability waiver.
- ◆ Make note of any nearby surface water which might receive runoff from the site.



STEP 7: PREPARE A SITE DEVELOPMENT AND OPERATION PLAN

- ◆ Write Site Development Plan for daily and long-term operations.
- ◆ Inspect incoming loads.
- ◆ Develop contingency plan and procedures for hazardous wastes, if found.
- ◆ Segregate materials in consolidated stockpiles.
- ◆ Keep non-disaster waste separate from disaster waste.
- ◆ Identify processing techniques and equipment to be used based upon materials to be collected.



STEP 8: PREPARE INSPECTION AND SITE MANAGEMENT GUIDELINES

- ◆ Designate a disaster debris manager.
- ◆ Establish inspection stands at site, depending on basis for payment .
- ◆ Develop tracking system for weight tickets, if used as verification for payment.



STEP 9: PREPARE A SITE RESTORATION PLAN

- ◆ Identify the processing and removal of materials from the site.
- ◆ Develop environmental monitoring plan to include baseline monitoring and testing for contamination.
- ◆ Restore site to its original condition.

CHAPTER 5

CONTRACTS

Background:

Contracts and franchise agreements are pivotal to ensuring a successful debris management program. Unless diversion is specified, it is likely the collected debris will be disposed of.

Regardless of the diversion program selected, the best way to divert disaster debris from landfills is to ensure that the contracts for debris removal include provisions requiring that the disaster debris be diverted from landfills through reuse, recycling, or other waste diversion techniques.

Contents:

This chapter contains ten sections.

STEPS	SECTION	PAGE
1	Perform Contract Services Assessment	5-2
2	Coordinate with haulers	5-4
3	Assess need for short- and long-term operations	5-6
	Short-term operations	5-6
	Long-term operations	5-7
4	Select Contract Type	5-8
	Time and Material Contract	5-9
	Unit Price Contract	5-10
	Lump Sum Contract	5-12
5	Determine need to establish special engineering organization	5-15
6	Develop project cost/quantity estimates	5-17
7	Develop Diversion Requirements & Sample Language	5-20
	City of Santa Clarita Cleanup Contract	5-22
	City of Oakland, Master Contract, 1991 Firestorm	5-23
	City of Los Angeles, Building Demolition Contract, 1994 Northridge Earthquake	5-23

Contracts

	City of Los Angeles, Unit Price Contract, 1994 Northridge Earthquake	5-24
	U.S. EPA Contract for Household Hazardous Waste Collection, 1995 Floods	5-25
8	Review General Considerations	5-26
9	Review Accounting Considerations	5-27
10	Review Contract Administration Procedures	5-29

☐ **STEP 1: PERFORM CONTRACT SERVICES ASSESSMENT**

Develop in advance: The best approach to disaster response is pre-disaster planning. Taking the following actions in advance allows time for the development of contract terms and conditions, cost estimating, legal review, and identification of potential contractors.

Identify and review existing contracts, franchise agreements, and mutual aid agreements in effect to help determine your contract needs based on the type of work to be performed.

In assessing your contracts and other agreements, make note of the following:

- ◆ any services that are provided relating to disaster debris;
- ◆ whether the contracts contain any relevant provisions dealing with disaster debris;
- ◆ whether the existing contract can be used as the vehicle to provide emergency cleanup work, either as written or modified; and
- ◆ what you can require in terms of diversion programs if they are not specifically included in a franchise agreement.

#	ACTIONS TO TAKE PRIOR TO A DISASTER
1	Coordinate development of collection, diversion, and disposal programs with your hauler(s).
2	Develop model contracts in advance.
3	Identify the kinds of work needing emergency/immediate contract services.
4	Develop a list of the equipment needed to support the disaster response.
5	Identify contractors in the area who have the abilities and equipment to handle the work.
6	Of those contractors identified above, identify those who can respond in an emergency.
7	Pre-qualify contractors to expedite the contracting process and disaster response.

Contractors:

When developing a list of pre-approved contractors, update the list every six to 12 months. At the same time, check to see that the contractors are holding the appropriate licenses and that those licenses are valid.

Note: Contractors will have to show proof of worker's compensation and liability insurance before entering into a contract. The local jurisdiction's risk manager will have to determine the minimum levels of coverage. **Verify with OES/FEMA that insurance premiums are reimbursable.**

Non-disaster waste:

The best approach is to keep disaster-related debris separate from non-disaster debris. Commingling the two wastestreams can compromise the city/county's reimbursement for the diversion program. As an alternative, set up separate contracts for disaster debris and non-disaster debris and keep separate records for each.

Note: This was not possible in the City of Los Angeles. Many victims were still removing earthquake debris while neighbors were rebuilding. There was no clear end to one activity before beginning the other.

**STEP 2: COORDINATE WITH HAULERS**

Do in advance:

The franchise and independent hauler can be instrumental in establishing a diversion program and in expediting debris cleanup.

It is important to coordinate with your franchise hauler in advance to:

- ◆ determine the services and equipment they can provide in an emergency, and
- ◆ develop a contingency plan should they not have the staff or equipment available.

This could include writing contracts for services the franchise hauler normally would provide but is unable to do so because of a shortage of staffing or equipment.

Disaster clause:

Determine if your franchise agreement contains a "disaster clause" requiring the franchisee to provide emergency cleanup services in the event of a disaster (provide equipment, labor, and diversion or disposal of collected materials). If not, it would be wise to include such a clause at the time the franchise agreement is renegotiated.

Ensure that your disaster clause includes the use of the franchisee's facility, equipment, and labor.

Example:

At the time of the Northridge earthquake, the City of Santa Clarita did have a franchise agreement with a disaster clause. It allowed them use of the franchise equipment and facility; however, it did not include the city's right to use franchise employees. As a result, the City did not have the staff needed to operate the equipment.

Waivers from

Be sure to get waivers from subcontractors releasing **subcontractors** the jurisdiction from liability. If the contractors do not pay their subcontractors, the subcontractors can then place a lien on the property where they removed debris and sue the jurisdiction to recover payment. Or, as an alternative, include such a provision in the contract for services.

☐ **STEP 3: ASSESS NEED FOR SHORT- AND LONG-TERM OPERATIONS¹**

Short- and long-term operations:

A jurisdiction will probably need both short- and long-term contracts in its recovery program. Define the scope of the project and then select the type of contract needed depending upon the type of operation undertaken.

Short-term operations²

First 100 hours:

Short-term operations are defined as those undertaken during the first 100 hours after a disaster. One method of contracting early in a disaster is the "**time and material**" type of contract.

This contract type is used immediately after a disaster for emergency life saving activities and debris clearance. Under this type of contract, the contractor is paid on the basis of time spent in accomplishing a particular task. This contract is acceptable if a **cost ceiling** is placed on the contract to build in cost controls.

Since short-term debris operations primarily involve equipment usage, the contract should be set up on an hourly basis. The "time and material" contract then becomes a "time" contract only.

Bid requests:

Bid requests should specify that the hourly rate will include all fuel, maintenance, repair, etc., and the operator. This can greatly simplify the bookkeeping, auditing, and monitoring of the work.

Advantages:

Short-term agreements allow for more flexibility in program operations. After the Northridge earthquake, the City of Los Angeles used only short-term (1-2 week) contracts with haulers. Longer contracts, which corresponded to the terms of the City's Damage Survey Reports, were written for the use of the various disposal and recycling facilities.

Long-Term Operations³

Services after first 100 hours:

If your jurisdiction determines that the situation is beyond the capabilities of existing resources (mutual aid, State and volunteer labor and equipment), then you should consider developing an organization to administer and manage a long-term contract operation.

Since the after effects of a disaster can be felt for months or even several years, the local jurisdiction cannot necessarily rely on short-term agreements for assistance. In addition, the prolonged recovery by local forces and contractors likely will require a long-term operation.

Primary factors:

The primary factors influencing the size and complexity of the long-term debris operations are:

- ◆ the composition and volume of debris;
- ◆ the area of debris concentration;
- ◆ the location of temporary storage sites, recycling sites, and disposal sites; and
- ◆ the need for private property debris removal.

Options:

There are two contracts typically used for long-term debris removal operations. They are the **Lump Sum** contract and the **Unit Price** contract.

As an alternative, a jurisdiction can establish a **special engineering organization**, either with force account personnel or with a local engineering firm, to undertake all project management operations related to debris collection, diversion, and/or disposal. Each of these options is discussed below.

☐ **STEP 4: SELECT CONTRACT TYPE⁴**

Three types: There are three contracts typically used in obtaining disaster debris services . They are:

- A. Time and material contract;
- B. Unit price contract;
- C. Lump sum contract.

A sample contract for each contract type above is found in Attachments A, B, and C respectively.

CONTRACT		CONTRACT TYPE	USE WHEN
A	Time and Material	Short-term Services for first 100 hours.	Used immediately after a disaster for emergency life saving activities and debris clearance.
B	Unit Price	Long-term Beyond initial 100 hours of recovery.	Use when scope of work is defined and can be quantified by actual field measure (recycle 10 tons concrete, 7 trees, etc.)
C	Lump Sum	Long-term Beyond initial 100 hours of recovery.	Use when scope of work is clearly defined are areas of work specifically quantified. Establishes total contract price by a one-bid item. (Demolish and recycle 1 structure for \$10,000).

Examples

Following are three methods to obtain disaster response services:

- ◆ Master Contract,
- ◆ Individual contracts, and
- ◆ Special Engineering Organization.

Master contract

Jurisdictions may choose to write a master contract covering all phases of debris collection, diversion, and/or disposal. In this situation, a prime contractor is hired with subcontractors, reporting to the prime contractor, hired to carry out specific tasks.

Example: City of Oakland

After the 1991 firestorm the City of Oakland wrote a master contract covering debris removal, recycling, and disposal. The prime contractor then subcontracted with a number of subcontractors for different aspects of the cleanup activities.

Individual contracts

Enter into individual contracts of short duration with a number of different contractors. This method can provide flexibility in changing contract provisions as the program is refined.

Example: City of L.A.

The City of Los Angeles selected contractors on a weekly basis for the 45 areas the City had designated for disaster cleanup.

A. TIME AND MATERIAL CONTRACT⁵

When to use:

Time and material contracts should only be used:

- ◆ during the first 100 hours of the recovery operation to perform emergency life saving debris clearance, and
- ◆ only after all available local and State government equipment has been committed.

Contract provisions:

The contract should clearly state that:

- ◆ the price for the equipment applies only when the equipment is operating;

- ◆ the jurisdiction reserves the right to terminate the contract at its convenience;
- ◆ the jurisdiction does not guarantee a minimum number of hours; and
- ◆ there is a cost ceiling for total work performed.

TIME AND MATERIAL CONTRACTS⁶ hourly rates		
Advantages	Disadvantages	Recommendations
Extremely flexible, not scope dependent	Contractor must be directed as to what work to perform	Seek competitive bids or negotiate reasonable hourly rates for equipment with operations.
Wide range of uses	Required full-time inspectors	Specify equipment as generically as possible to encourage competition.
Great for emergency "Hot Spots" and early debris right-of-way clearance	Requires documentation of actual hours worked by equipment and operators	Train inspectors on documentation requirements for time-and-material contracts.

B. UNIT PRICE CONTRACT⁷

Description:

The Unit Price and Lump Sum contracts are recommended after the immediate response phase.

The Unit Price Contract utilizes construction units and prices for these units to develop line item costs and total contract cost.

Scope of work:

The Unit Price Contract is used when:

- ◆ the scope of work may be defined, and
- ◆ generally quantified by actual field measure, (e.g., 200 cubic yards of sand, 10 tons of rubble, 7 trees, etc.).

Contracts

Bottom line: The total "bottom line" of the contract may increase or decrease depending upon the accuracy of the unit quantity.

For this reason, it is as important to properly estimate units as it is to estimate unit cost.

Use accurate units: The unit used in the Unit Price Contracts must be as accurately estimated as units possible; otherwise, the final bottom line amount of the contract will be significantly different from the contract bid received at the bid opening.

Attachments: Attachment B contains a model Unit Price Contract. Attachment D contains the City of Los Angeles' Unit Price Contract.

UNIT PRICE CONTRACTS cubic yard		
Advantages	Disadvantages	Recommendations
Flexible, intervention will not change contract conditions.	Full-time (specially trained) field inspectors required.	For quantities less than 50,000 CY, monitor loading of trucks and log in data such as CY and truck. Check site to verify placement.
Accurate account of actual quantities removed.	Contractor fraud, if loading and dumping are not closely monitored.	For quantities over 50,000 CY, recommend a documentation format (ticket).
Wide range of competition because of simplicity of contract.	Segregation of debris will complicate contract.	
Low contractor risk.	Trucks must be measured and numbered.	

Payment under unit price contract

- Load ticket:** Payment under a unit price contract is normally made on the basis of a load ticket.
- ◆ Load tickets should be treated as accountable forms. The operations office should know what forms have been issued, how many have been issued and to whom.

C. LUMP SUM CONTRACT⁸

Description: The Lump Sum Contract establishes a total contract price by a one item bid from the contractor. For this type of contract, the price for the work is fixed unless there is a change in the scope of work to be performed. The bottom line of the contract is not in question as it is with the Unit Price Contract.

Scope of work: If the scope of work is not well defined, this method of contracting puts the responsibility of the quantity estimate and the definition of the scope of work on the shoulders of the contractor bidding the project.

Consequently, experience has shown that the contractor will pass this burden back to the owner in the form of contingencies which will be incorporated into the bid price.

When to use: As mentioned before, the Lump Sum Contract should be used only when the scope of work is clearly defined and the areas of work can be specifically quantified. A model Lump Sum Contract can be found Attachment C.

LUMP SUM CONTRACTS⁹ Area Method (debris removal based on a defined area)		
Advantages	Disadvantages	Recommendations
Minimum labor required for management.	Must have a clear definable scope of work that can be quantitatively measured by the contractor.	Use any time scope of work is clearly definable.
Contractor shoulders most of the risk.	Often difficult to quantify what debris will be brought to the right-of-way for removal.	
Quantities do not have to be documented as in a unit price contract.	High probability of claims if debris estimates are difficult to estimate and require speculation.	

LUMP SUM CONTRACTS¹⁰ Pass Method (based on a specified number of passes through the disaster area)		
Advantages	Disadvantages	Recommendations
Minimum labor required for management.	Must have accurate, up-to-date plans and information on all roads that will be included in the "pass" scope of work.	Provide three to four passes depending on the magnitude of the disaster.
Defines scope better than area method and decreases the risk of claims caused by quantity speculation.	Public must cooperate in the removal process.	Solicit a price for each pass and a total job price.
Quantities do not have to be documented as in a unit price contract.	Contracting agency must be successful in communicating with the public in the removal area.	Clearly define any debris segregation requirements, road locations by detailed scaled maps, time lapse between passes, and required time frame to complete each pass.

□ **STEP 5: DETERMINE NEED TO ESTABLISH SPECIAL ENGINEERING ORGANIZATION¹¹**

Purpose: To undertake long-term operations, a special engineering organization can be formed immediately for the purpose of identifying the full scope of the project. This organization can handle all project management operations related to debris collection, diversion, and/or disposal.

Local firm vs own staff: The jurisdiction may wish to hire a local engineering firm for this purpose, if the community's internal engineering staff is heavily involved with the repair and replacement of publicly owned facilities damaged by the disaster.

Funding limitation: FEMA will only pay overtime for force account personnel performing emergency work (e.g., debris removal). However, FEMA will pay **ALL** eligible costs for contracted labor.

This is an important point to keep in mind when deciding whether to undertake the debris removal operations with force account personnel or to enter into a contract for the work.

Example: **After the 1994 Northridge Earthquake:** The Mayor and City Council decided that City forces could handle the recovery operations at a cost savings as compared to contracting out for the recovery work. In response, the City of Los Angeles' Department of Public Works implemented an earthquake debris removal program. The program was led by the Bureau of Engineering, with support from the Bureau of Contract Administration, which provided field monitoring of contractors, and the Bureau of Sanitation, Integrated Solid Waste Management Office, which directed the recycling efforts.

Engineering organization: Within the Bureau of Engineering, the Northridge Earthquake Recovery Division was created. Staff from various Divisions within the Bureau were assigned to the new ad hoc division and assumed responsibilities for different aspects of the earthquake recovery. After the work was completed, the Division was subsequently disbanded.

Advantages: Establishing this Division aided in coordinating all earthquake-related activities and simplified FEMA billing for disaster-related costs. In this way, the City could document that all activities performed by this Division were earthquake related and therefore reimbursable by FEMA.

Staffing requirements

At a minimum, the engineering organization will need:

Staff	Responsibilities
Inspectors	to compile the type and amount of debris within the project area
Engineers	to plan the work for maximum efficiency in the operation and to develop the jurisdiction quantity/cost estimates
Contract specialists and draftsmen	to prepare the contract documents
Data managers	to set up computerized use of data, geographic information system

☐ **STEP 6: DEVELOP PROJECT QUANTITY/COST ESTIMATES¹²**

Cost estimating: Develop the project estimate as follows:

STEP	ACTION
1	prepare an estimate of the types and quantities of debris for contracting purposes;
2	determine the location of the debris;
3	develop unit cost data.

Units for payment:

Quantity estimates should be expressed in the units which are going to be used in the establishment of contract line item prices.

Select units based on the method that will be used to verify pay quantities for work under the contract. Typically, there are three different units used:

- ◆ cubic yards;
- ◆ tons; and
- ◆ each.

If pay by	Then Use	When
Volume	Cubic yards	a contractor is to be paid for the volume of material removed from a work site by approximate measurement of that volume
Weight	Tons	contractor is paid by weighing the trucks used to haul the material to a processing or disposal site
No. of items	Each	contractor is to be paid by the number of items removed from the project site (i.e., trees, damaged vehicles, etc.)

Measurement:	<p>For debris removal, units are normally cubic yards (cy), tons, or both.</p> <p>Since it is difficult in most debris operations to estimate the weight of material to be removed, it is suggested that volume and number measurements be used as a normal rule.</p>
Estimating volume:	<p>The volume of debris can be approximated by an estimate of length, width, and depth of the material in question.</p> <p>The amount of the material to be removed and the accuracy desired in the estimate will determine the procedures used for this volume measurement.</p> <p>On a large-scale disaster, an approximate quantity estimate may be derived by marking the area on a scaled map and approximating an average depth.</p>
Debris location:	<p>When developing quantity estimates, instruct inspectors to note the type and location of the debris.</p> <p>Other methods used include instituting a Geographic Information System to map debris locations, scouting neighborhoods in advance, and setting up a debris hotline to take calls from the public.</p>
Develop unit price data¹³	
Unit price variables:	<p>The development of a unit price includes many variables, such as:</p> <ul style="list-style-type: none"> ◆ types and amounts of debris; ◆ method of removal; ◆ distance to the diversion or disposal site; ◆ routes to the diversion or disposal site; ◆ permitting requirements; and ◆ work site limitations.
Cost estimate:	<p>The cost estimate should address all items to be included in the scope of work. These items will include the actual work which may be required to accomplish the specific tasks.</p>

Consider the large variety of factors which will affect the contractor's pricing, and be sure to take into account the abnormal conditions encountered by contractors in debris operations.

General contracting issues

Unit price contract: When writing contracts for removal of debris or wreckage, unit price (cubic yard) or fixed price contracts are preferred over equipment rentals or hourly rate contracts (time and material) because they are usually less expensive.

The Unit Price contract is the one recommended by the City of Los Angeles for its disaster cleanup.

Do not use cost-plus-percentage: Most State procurement regulations allow for abbreviated contract procedures when the Governor declares a state of emergency. However, under no circumstances should "cost-plus-percentage-of-cost" contracts be used.

There is no incentive for the contractor to hold costs down. The higher the costs, the bigger the profit the contractor receives.

Contingency contracts: The State of California and FEMA prohibit use of the contingency contract. Under no circumstances should a jurisdiction issue a contract with a condition that payment will be made only if the jurisdiction receives funds from the State and/or the Federal governments.

**STEP 7: DEVELOP DIVERSION LANGUAGE FOR CONTRACTS****Diversion strategies:**

Following are some strategies to ensure that the disaster debris collected is actually diverted from landfills:

- ◆ review existing contracts to determine if there are any relevant provisions dealing with disaster debris or if the contract can be used as the vehicle to provide emergency cleanup work, either as written or modified;
- ◆ identify the kinds of work needing emergency or immediate contract services;
- ◆ develop a list of the equipment needed to support the disaster response;
- ◆ include diversion language in the contract to ensure that the collected materials are indeed diverted and not disposed of in the landfill. (See sample language on pages 22-26);
- ◆ divide the disaster area into zones or sectors; assign contractors to a zone/sector so that you can keep track of the staff and plan for a consistent approach to the cleanup;
- ◆ require the contractor to report recycling activity through source separation and the destination of remaining debris for tracking purposes;
- ◆ require a minimum source separation recycling rate in the demolition contract language; and
- ◆ consider establishing a non-compliance fee or penalty for not diverting disaster debris to the extent feasible.

Suggestion: Define what is meant by "diversion, reuse, and recycle" in the contract. Companies may guarantee a recycling rate and then burn the materials as that may fit under the definition of recycling.

**Example:
non-compliance fee**

The City of Los Angeles, in its July, 1995, demolition contract, added a provision whereby the contractor is assessed a non-compliance fee of \$400 per load for any documented mixed debris that was not delivered to a recycling center. The non-compliance fee is deducted from final payment. (See Attachment E).

**Sample diversion
language:**

A number of contracts developed by local jurisdictions have included provisions for recycling of disaster debris. Following are descriptions of their approach or sample contract language.

Keep in mind that these contracts were developed to respond to a specific disaster and to local conditions. The contract language may not be appropriate or applicable to your situation, but is presented here to show how jurisdictions have approached the issue.

Example 1:

City of Santa Clarita cleanup contract.

Notice Inviting Bids

"In response to the Northridge Earthquake of January 17, 1994, the City of Santa Clarita has stockpiled disaster related debris at a designated site. The California Integrated Waste Management Act, Assembly Bill 939, requires that the City of Santa Clarita reduce the amount of waste going to landfills 25% by 1995 and 50% by the year 2000. Consequently, the stockpiled materials shall be diverted from landfills to the greatest extent possible.

"Contractor Service Requirements

Contractor shall transport recovered material to a permitted resource recovery facility within a 40-mile radius from site.

"Contractor shall provide all necessary equipment, materials and labor necessary to remove and recover, to the extent possible, all stockpiled disaster related debris at the site.

"Contractor shall haul all material that is non-recoverable to a state-permitted sanitary landfill for disposal.

"Contractor shall provide the City of Santa Clarita with documentation of the amount and type of material removed from the site.

"'Recover' means to utilize materials which can be used as raw materials in the manufacture of new products, or as values which can be converted into some sort of fuel or energy source. Recover may include reuse, recycling, waste-to-energy, composting, and/or other components."

Example 2:

City of Oakland, master contract, 1991 firestorm.

The City let a master contract for the removal, disposal, and recycling of debris. Bid specifications for the contractors to remove the debris stated that the contractor is responsible for removal and transportation of cut trees to proper recycling or recovery facilities and that the contractor must segregate metals, concrete, and other recyclables from nonrecyclable debris at the site of generation.

In addition the City provided contractors with the names of Bay Area construction and demolition waste recyclers, and required contractors to provide weekly load verification reports to prove that the materials were entering a recycling facility.

Example 3:

City of Los Angeles, building demolition, 1994 Northridge earthquake

"Project Requirements

Recycle demolition materials to the greatest extent possible without delaying the project.

Summarize and document the amounts and types of materials directly recycled and material removed from the site on the enclosed recycling log found within this Contract.

Documentation includes receipts of materials sold, etc.

"Demolition debris not directly recycled from the site must be hauled to the recycling facility (not landfill) located at (site). The recycling facility located at (address) charges \$20/ton for inert material and \$24.75/ton for mixed loads.

"Identify loads to (site) as "City Demolition Debris," state the demolition site address, and pay all allocated fees. Copies of weight tickets from the previous day's work will be collected at the demolition site on a regular basis by a representative from the Integrated Solid Waste Management Office. Copies of weight tickets must also be turned in to the Engineer at the completion of the project.

"Note: Contractor will be assessed a non-compliance fee of \$400 per load for any documented mixed debris that is not delivered to the recycling center at (address). The non-compliance fee will be deducted from final payment."

Example 4:

City of Los Angeles, unit price contract, 1994 Northridge earthquake.

Although the City did not use the unit price contract it had developed after the Northridge earthquake recovery, it is presented here as an example.

Following is a summary of pertinent contract provisions related to recycling disaster debris.

Incentive payment:

The City will pay tipping fees using the existing authorization letter; however, only source separated recycling facilities and (name of recycling facility) (mixed debris recycling) will be authorized. Contractors will receive an incentive (10% of unit price) to use source separated facilities, since the City saves over \$200 per load when using these types of facilities.

Collection plan:

The Contractor will submit a "Collection Plan" that details how the debris will be collected as well as specifics on equipment and personnel that will be utilized.

City Inspectors will ensure that the Contractor implements the Collection Plan. This will include ensuring that all debris is collected, that Contractor mobilized equipment greater than or

equal to equipment bid in Collection Plan, as well as ensuring that the Contractor conducts work in a safe manner.

Example 5:

USEPA Contract for Household Hazardous Waste Collection, 1995 floods

Following are excerpts of contract provisions relating to the waste management hierarchy and recycling.

Waste management hierarchy:

"Contractor shall follow the waste management hierarchy during this contract period unless directed by Agency to do otherwise:

1. Source reduction (reduction, reuse);
2. Recycle;
3. Neutralize, stabilize, or deactivate; and finally
4. Environmentally sound incineration or land disposal.

Recycling:

"In accordance with the waste management hierarchy described above, Contractor shall place an emphasis on reuse and recycling materials rather than disposing of them.

"Contractor shall separate all latex paint for recycling. Contractor shall stabilize and landfill all contaminated or dried paint.

"Contractor shall, at a minimum, recycle the following materials: motor oil, oil filters, antifreeze, nickel cadmium batteries, mercury batteries, aerosol cans, florescent bulbs, latex paint, and paint cans.

Contractor will arrange for the recycling of lead acid batteries with a local recycler. Contractor is responsible for the collection of these batteries and determining if they are non-recyclable."

☐ **STEP 8: REVIEW GENERAL CONSIDERATIONS¹⁴**

**Documents
on record:**

For work performed by contract, the following must be on record:

- ◆ copy of C-21 license;
- ◆ copy of contract;
- ◆ copies of requests for bids;
- ◆ copy of bid documents;
- ◆ invoices submitted by contractor, complete with a detailed breakdown of all costs;
- ◆ warrants authorizing check issuances;
- ◆ checks issued in payment;
- ◆ certified payroll; and
- ◆ verification of insurance coverage and any bonds required.

**Debarred
contractors:**

The jurisdiction may not enter into any contract with parties whose names appear on the FEMA Consolidated List of Debarred, Suspended and Ineligible Contractors.

Bonding:

Federal and state program regulations require that contractors be bonded. Contractors must have a payment bond and a faithful performance bond. Bonding protects the jurisdiction from failures by the contractor to perform.

Licenses:

Contractors must be licensed. This requirement also extends to subcontractors and to the prime contractor. Contractors should have a C-21 license.

**Contractors State
State License Board:**

Require the contractor to prove he/she is licensed. If you have questions, contact the Contractors State License Board. This board maintains the current status of licenses of all contractors licensed in the State of California.

☐ **STEP 9: REVIEW ACCOUNTING CONSIDERATIONS¹⁵**

Document contract price:

Document how you arrived at the contract price. This is easy if you use the Request for Proposal or competitive bid processes. This is not so easy if you are procuring emergency contract services without formal bidding.

Damage Survey Reports

Disaster-related activities must be accounted for separately from normal activities.

Each damaged site has the potential to generate one or more Damage Survey Reports (DSR), the FEMA document used to obligate reimbursement funds. Your jurisdiction must account for the costs by DSR then by site (DSRs are by segment [subsite] of a "site.").

Segregate costs

Require the contractor to segregate costs on the invoices by site or damage survey report (DSR) for work performed.

- ◆ A problem could arise if one contract covers several sites. In this case, FEMA and the jurisdiction may have to prorate the contractor's costs to each DSR site. This could cost your jurisdiction funds if there are allocations to ineligible sites.
- ◆ To avoid this problem, include the requirement to cost out the services by site in the contract under the section instructing the contractor as to how and when to invoice its services.

Develop contract documentation

Take the following actions to ensure that adequate documentation is established for state and federal reimbursement:

- ◆ Use load tickets as accountable forms;
- ◆ Require contractor to submit reports and payment estimates;

Contracts

- ◆ Set up accounting system to track contract payments;
- ◆ Document how contractor was selected; and
- ◆ Keep a file of all documents related to the contract, such as requests for bids, invoices, checks issued in payment, etc.

More information:

For more information, refer to the *Guidelines for Documenting Disaster Costs for Federal and State Public Assistance Programs*, contained in the *Public Assistance Resource Manual*. Contact OES for a copy).

☐ **STEP 10: REVIEW CONTRACT ADMINISTRATION PROCEDURES¹⁶**

- Contract modification:** During the administration of the contract, different types of modifications may be necessary to incorporate new requirements in order to provide contractual coverage for situations which develop after award.
- Put it in writing:** All modifications shall be in writing in order to protect the interests of both parties. The contract should contain a clause which permits the contracting officer to make changes unilaterally within the scope of the contract, subject to an equitable adjustment of the contract price.
- Acceptance and payment:** Final inspection and the method of interim and final payments are a part of the general conditions of the contract and should be set forth in the original specification or other contract documents.
- Suggestion:** Consider including a retention clause; 20 percent is typical. This can avoid problems by ensuring that the work is completed to the satisfaction of the contract manager before the final funds are released to the contractor.
- Verification:** Local governments should accept parts of all of the work only after it is verified through the inspection process that the completed work was performed in accordance with the standards stipulated in the contract.
- Progress payments:** In the event the authorized work tenure exceeds a period of one month, provisions can be made to make progress payments at least monthly to the contractor.
- If the contract period is less than one calendar month, normal payment should be made in one total sum.
- Contract closure:** A contract is complete when all of the services or items called for have been delivered or performed and accepted.

The contract is not administratively complete, however, until all actions taken in compliance with the contract have been properly documented and final payment is made.

ATTACHMENTS

- A. Model Time and Material Contract
- B. Model Unit Price Contract
- C. Model Lump Sum Contract
- D. City of Los Angeles Unit Price Contract
- E. City of Los Angeles Demolition Contract

REFERENCES

- ◆ Debris Management Course, Reference Manual, FEMA, Emergency Management Institute.
- ◆ Debris Removal Guidelines for State and Local Officials, FEMA, DAP-15 (Draft), Dec. 1991 Modified.
- ◆ San Joaquin County Disaster Recovery Manual, 8/95.
- ◆ Disaster Planning Financial Considerations, State Controller's Office.

ENDNOTES

1. Debris Removal Guidelines for State and Local Officials, FEMA, DAP-15 (Draft), December 1991, Modified.
2. Ibid.
3. Ibid.
4. Ibid.
5. Ibid.
6. Debris Management Course, Reference Manual, Emergency Management Institute, FEMA, page 22.
7. Ibid.
8. Ibid.
9. Ibid.

10. Ibid.
11. Ibid.
12. Ibid.
13. Ibid.
14. *San Joaquin County Disaster Recovery Manual, 8/95;*
15. Ibid.
16. *Debris Removal Guidelines for State and Local Officials, FEMA, DAP-15 (Draft), Dec. 1991 Modified;*

CHECKLIST

CHAPTER 5 CONTRACTS

☐ **STEP 1: Perform contract services assessment**

- ◆ Identify existing contracts, ordinances, or mutual aid agreements that might deal with disaster debris, debris removal, recycling, etc.
- ◆ Develop a "disaster clause" if one is not already in place in franchise agreement or contract.
- ◆ Identify the kinds of work that will require immediate contract services.
- ◆ Identify contractors available to respond in an emergency
- ◆ Identify contractors in the area who have the abilities and equipment to perform the work.
- ◆ Pre-qualify a list of contractors who can perform the required work.

☐ **STEP 2: Coordinate with haulers**

- ◆ Determine the services and equipment haulers can provide in an emergency.
- ◆ Develop a contingency plan if no services or equipment is available.
- ◆ Obtain waivers from subcontractors releasing jurisdiction from liability.

☐ **STEP 3: Assess need for short- and long-term operations**

Short-Term Operations

- ◆ Determine if need short-term contracts (during the first 100 hours) for emergency life saving measures and debris clearance.
- ◆ Set up contract on an hourly basis.
- ◆ Solicit hourly rates from several different contractors.
- ◆ Specify that hourly rate will include all fuel, maintenance, repair, etc. and the operator.

Long-Term Operations

- ◆ Prepare long-term contract if situation is beyond capabilities of existing resources and need assistance beyond the first 100 hours.
 - ◆ Consider establishing special engineering organization.
 - ◆ Determine if will hire a local engineering firm or set up an internal organization composed of city/county engineering staff.

☐ **STEP 4: Select and execute contract**

- ◆ Determine appropriate contract type--
 - ◆ for short-term operations: Time and material.
 - ◆ for long-term operations: Unit Price, Lump Sum.
- ◆ Review methods to obtain disaster response services:
 - ◆ master contract;
 - ◆ individual contracts; and
 - ◆ establish special engineering organization.

☐ **STEP 5: Establish special engineering organization**

- ◆ Establish for long-term operations.
- ◆ Determine whether to hire local engineering firm or using city/county engineering staff.
 - ◆ City of Los Angeles established the Earthquake Recovery Division using staff from Bureau of Engineering
- ◆ Staff needed:
 - ◆ inspectors;
 - ◆ engineers;
 - ◆ contract specialists; and
 - ◆ data managers.

☐ **STEP 6: Develop project quantity/cost estimates**

- ◆ Estimate the types and quantities of debris for contracting purposes.
- ◆ Prepare map with debris locations.
- ◆ Prepare government cost estimates for management purposes.
- ◆ Select units (cubic yards, tons, each) to be used in establishment of contract line item prices.
- ◆ Develop unit cost data.

☐ **STEP 7: Develop diversion language for contracts**

- ◆ Develop strategies to ensure disaster debris is diverted from landfills.
- ◆ Include diversion language in contracts for debris removal and debris management programs.
- ◆ Train site inspectors to monitor and enforce diversion provisions.
- ◆ Examples:
 - ◆ City of Santa Clarita;
 - ◆ City of Oakland;
 - ◆ City of Los Angeles, building demolition;
 - ◆ City of Los Angeles, unit price contract; and
 - ◆ U.S. EPA contract for household hazardous waste collection, 1995 floods.

☐ **STEP 8: Review General Considerations**

- ◆ Ensure that contractors are bonded--payment bond and faithful performance bond.
- ◆ Ensure that contractors have C-21 license.
- ◆ Debarred contractors.

☐ **STEP 9: Review Accounting Considerations**

- ◆ Document how contract price was arrived at.
- ◆ Segregate costs on invoices by site or damage survey report for work performed.
- ◆ Account for disaster-related activities separately from normal activities.
- ◆ Develop contract documentation:
 - ◆ use load tickets as accountable forms;
 - ◆ require submission of reports and payment estimates;
 - ◆ set up accounting system to track contract payments;
 - ◆ document how contractor was selected; and
 - ◆ keep a file of all documents related to the contract, such as requests for bids, invoices, checks issued in payment, etc.



STEP 10: Review Contract Administration Procedures

- ◆ Monitor contractor performance.
- ◆ Require submission of reports and payment estimates.
- ◆ Make frequent visits to job sites in lieu of progress reports
- ◆ Put all modifications in writing.
- ◆ Set forth final inspection and method of interim and final payments .
- ◆ Close contract when all services or items called for have been delivered or performed and accepted.

CHAPTER 6

REIMBURSEMENT

Background:

A disaster can be devastating to a jurisdiction's resources, both in personnel and in funds. The job of protecting lives and property will begin immediately after the disaster; however, funding from the state and FEMA will not follow so quickly.

To get started in its recovery efforts, a jurisdiction must be knowledgeable about the state and federal reimbursement programs and the process for requesting funding. This chapter also gives guidelines for receiving reimbursement for recycling programs even if they are not "least cost" as is FEMA's policy.

Contents:

This chapter has 8 sections:

SECTION	TOPIC	PAGE
1	OES Role - Local government's advocate	6-2
2	Reimbursement Program	6-3
3	Federal-State Cost Share	6-4
4	FEMA-State Agreement	6-5
5	Reimbursement for Diversion or Recycling Programs	6-6
6	City of Los Angeles' Earthquake Recycling Program	6-7
7	Payment and Payment Forms	6-9
8	Special Trust Fund	6-11

☐ **STEP 1: ROLE OF THE OFFICE OF EMERGENCY SERVICES¹**

OES role: The State Office of Emergency Services (OES) is responsible for administering the Public Assistance Program under The Stafford Act.

Responsibilities: OES is responsible for:

- ◆ administering the grant for all funds provided under the FEMA Public Assistance Grant Program available to eligible private non-profit organizations, state and local governments and special districts after a Presidential declared disaster or emergency.
- ◆ serving as the communications link between the subgrantee and FEMA during the entire recovery process;
- ◆ providing State support for damage survey activities; and
- ◆ providing technical advice and assistance to eligible subgrantees.

Direct questions OES will coordinate all requests for assistance to

OES: FEMA. Direct your questions and concerns to your OES Applicant Services Representative (ASR). OES is your advocate for receiving state and federal assistance and can help make the recovery process an easier one. (See Attachment A for a listing of regional offices and contacts).

☐ **STEP 2: REIMBURSEMENT PROGRAM**

Reimbursement level: Local governments and special districts will be reimbursed for not less than 75% of eligible disaster-related costs under the federal public assistance program and up to 25% under the California Natural Disaster Act (NDAA).

Eligible costs: Eligible costs for reimbursement include:

- ◆ permanent repairs to damaged facilities,
- ◆ eligible emergency work, and
- ◆ protective measures.

Public Assistance Program: The Public Assistance program is intended to be a reimbursement program. In most cases, funds must be expended before the applicant may receive disaster assistance grant funds.

Lengthy process: This reimbursement process is a lengthy one involving the review of damage estimates. Actual receipt of funds may take weeks or months.

Cash flow: Anticipate that a jurisdiction must fund diversion programs until FEMA reimburses the program costs. This may necessitate using general funds or taking out a private loan.

☐ **STEP 3: FEDERAL/STATE COST SHARE**

Cost share:

Following is the breakdown of federal/state and local cost shares established as minimum under the Stafford Act. The cost share is also subject to FEMA-State Agreement.

Agency	Cost share %
FEMA	pays a minimum of 75% of the eligible disaster-related costs
State OES	generally pays up to 75% of the remaining 25% of the non-federal costs;
local government	is responsible for 25% of the non-federal share or 6.5% of total eligible costs. However, this 6.5% can be less, depending upon the circumstances.

OES does not share in the costs incurred by a state agency.

Cost share:

The division of costs among Federal, State, and local governments is a negotiable item. The minimum federal share under the Stafford Act is 75%. However, depending on the circumstances, the Federal government may assume a larger percentage of the costs.

Typical costs:

The federal/state share is typically 75%/25%, but this varies depending upon the extent of the disaster as outlined in the FEMA/State Agreement for that declaration. It is based upon the State's ability to pay the cost share.

Example:

Sometimes a threshold dollar amount is used. For example, for eligible project costs up to \$100,000, the cost share may be 75%/25%, but after that it may be 90%/10% or 100 % reimbursed by FEMA.

□ **STEP 4: FEMA-STATE AGREEMENT²**

Content of FEMA-State agreement:

After the President's declaration of a major disaster or emergency, the Governor and the appropriate FEMA regional director execute a FEMA-State Agreement. The agreement:

- ◆ prescribes the manner in which Federal aid under the Stafford Act is to be made available,
- ◆ lists the areas within the state that are eligible for assistance;
- ◆ stipulates any division of costs among federal, state, and local governments; and
- ◆ specifies the period recognized as the duration of the major disaster or emergency.

Negotiations:

It is when the FEMA-State team is developing this agreement that the state (OES) can negotiate the state cost share with FEMA. Typically the federal/state share is 75%/25%. However, in the case of the Northridge earthquake in 1994, the federal/state share was 90%/10%; for Loma Prieta the federal share was 100%.

Various factors:

Keep in mind that many factors go into the determination of the cost share and that the particular circumstances of each disaster or emergency will vary.

□ STEP 5: REIMBURSEMENT FOR DIVERSION OR RECYCLING PROGRAM

Confirm program eligibility

Obtain written approval from FEMA for the reimbursement of the diversion program before instituting the diversion program. This is to ensure that FEMA will reimburse the jurisdiction for all program costs. Establishment of a diversion program can often hinge on whether a city/county has the funds to start up such a program until federal funding becomes available.

Loan:

A jurisdiction may need to draw upon its general funds, obtain a loan, or use private funds to establish a program until FEMA reimbursement is received.

Least cost:

FEMA's policy to date has been to reimburse for the "least cost" programs, and reimburse for diversion programs if they are in keeping with an existing policy of the jurisdiction.

However, the jurisdiction must document such policies, provide adequate documentation to FEMA, and receive their approval prior to implementing the diversion program in order to receive reimbursement.

FEMA consultant:

Local jurisdictions should be aware that if they do not have local expertise on the reimbursement process, they can ask for assistance from the Federal, State, or private resources to help them with the reimbursement process.

Please refer to the NDAA and FEMA guidelines as to whether reimbursement for a private consultant can be reimbursed.

☐ **STEP 6: CITY OF LOS ANGELES' EARTHQUAKE RECYCLING PROGRAM³**

- Example:** After the Northridge earthquake in 1994, the City of Los Angeles negotiated with FEMA to receive reimbursement for recycling activities. The City, state OES, and FEMA agreed upon a Damage Survey Report (DSR) with a scope of work that included monitoring the recyclable debris and waste generated by the City's Demolition and Debris Removal Program and assisting in the development and implementation of recycling programs. (See Attachment B for a copy of the DSR).
- Documentation:** The City provided documentation to FEMA that the City had an **existing** policy of recycling to justify spending more than "least cost" if necessary. Take note that this effort took approximately three months to resolve.
- Pilot program:** To demonstrate to FEMA that recycling was a viable option to disposal of disaster debris, the City established a pilot curbside collection program that lasted from 2/19/94 to 3/20/94.
- Identify diversion potential:** The pilot was conducted as a means to identify the potential for recycling the curbside debris collected under contract to the Bureau of Engineering by private contractors⁴.
- Lost time:** The City of Los Angeles estimated that three months had passed before their recycling programs were up and running, which meant that a good deal of recyclable materials were sent to the landfill.

Reimbursement

Suggestion:	Ensure that your jurisdiction has on record a policy of diverting waste from landfills through recycling or other diversion programs. This can take the form of an ordinance, resolution, a debris management plan, or actions taken to implement diversion programs, etc.
Check with OES:	Coordinate with your OES contact to determine the specific documentation FEMA requires for reimbursement of diversion or recycling programs that cost more than "least cost" as FEMA policies can change and can differ from previous disasters.
City of L.A. documentation:	Also included in Attachment A is a copy of a letter to FEMA from the City of Los Angeles providing backup documentation to demonstrate local/state/federal policies that give preference to recycling as a waste management strategy for Los Angeles.

☐ **STEP 7: PAYMENT⁵**

Table: The table below shows the payment federal and state cost shares:

Federal Share	
Small Project DSRs	OES will automatically issue 100% of the federal share for small project DSRs.
Large Project DSRs	To receive payment for large project DSRs, you must complete the Request for Reimbursement (OES Form 131). You can receive reimbursement for up to 75% of the federal share large project DSRs. The remaining 25% will be withheld until final inspection.
State Share	
	Upon completion and submittal of the OES Form 96 and the NDAA Form 3, you will receive payment for not less than 75% of the state share of your approved DSRs. (The state share is 25% of the total cost of the project).

Small projects: Regarding Small Project DSRs, per Code of Federal Regulations (CFR) 44 Section 206.203, the threshold dollar amount differentiating small from large projects varies with disasters since it is adjusted annually to reflect changes in the Consumer Price Index for All Urban Consumers published by the Department of Labor.

Example: For the 1995 Winter Storms, an individual project was designated a small project if costs were less than \$43,600.

Large projects: Regarding Large Project Damage Survey Reports, the withholding varies according to the Federal-State Agreement for each disaster. For example, for the Northridge Earthquake, only 10% of the Federal Share was withheld.

Reimbursement

Required forms⁶: Local governments and special districts must submit the following forms to receive payment:

Federal Public Assistance Program Forms	State Natural Disaster Assistance Act (NDAA) Program Forms
<ul style="list-style-type: none">◆ Designation of Applicant's Agent Resolution (OES Form 130)◆ Project Application for Federal Assistance (OES Form 89)◆ Vendor Data Record (Form STD 204) - This form should be completed using the private non-profit organization's address and corporate identification number.◆ Request for Reimbursement (OES Form 131) - For large project DSRs.	<ul style="list-style-type: none">◆ Exhibit D - Applicant Approval Form for Natural Disaster Assistance (OES Form 96)◆ Request for Advance of Funds State NDAA Program (NDAA Form 3 - OES Form 125)

☐ **STEP 8: ESTABLISHING A SPECIAL TRUST FUND⁷**

Background:	Once the County project application has been accepted, DSR's approved, and funds obligated by FEMA, OES will authorize reimbursement for actual expenditures on approved DSRs only.
Large projects:	For large projects OES initially pays out 90% of the 75% federal share to cities and counties, and 75% of the 75% Federal share for state agencies, special districts and eligible private non-profits.
Small projects:	Small project DSRs are paid in full after DSR approval. In general, the amount will be 100% of FEMA's 75% share of the total approved amount.
Board action:	<p>Prior to the funds arrival, the County shall establish by action of the Board of Supervisors a special disaster trust fund for deposit and disbursement of disaster funds.</p> <p>State OES <u>always</u> requires funds to be in an "non-interest bearing" fund.</p>
Trust title:	The title of the trust fund shall include the established disaster FEMA number, i.e., DR 677, DR 651, etc. Using this format allows quick reference as to which disaster the monies are for, rather than using titles such as Jones Tract Levee, or other titles, which could be used several years in a row.
Advancing funds the to departments:	Expenses to date will be advanced providing department produces full documentation. (Advances can be made at different stages of the project.) This will alleviate the problem of a bad audit trail.

An entry is developed by the Auditor's Office for each trust fund in order to keep track of the number of invoices paid, to whom paid, invoice number, and category number. This entry allows document search in the final audit.

County

disbursement:

The County Auditor-Controller will disperse funds from the Special Trust Fund when the County Local Agent (OES) has reviewed the records of the completed work and is satisfied that all supporting documentation is available. The Local Agent may request a County auditor to assist in the document review.

Single audit act:

The Auditor-Controller Office will send an annual "account activity" report to fill out. This report is an overview of the amount of fiscal activity from the trust fund. The report is part of the overall County Single Audit Act report that FEMA requires.

ATTACHMENTS

- A. Listing of OES Regional Offices
- B. Los Angeles Earthquake Recycling efforts
 - ◆ summary memo dated 4/18/94
 - ◆ Table 1A showing tonnage to recycling facilities and % recycled at those facilities as of 6/7/94
 - ◆ 2/10/94 and 2/11/94 internal memos used to brief OES/FEMA staff regarding existing policy of recycling to justify spending more than least cost if necessary
 - ◆ Damage Survey Report written by OES agreeing to training - implementation - monitoring costs for recycling programs

REFERENCES

- ◆ Disaster Recovery Public Assistance Applicant Packet for Local Government and Special Districts, Governor's Office of Emergency Services

ENDNOTES

1. Disaster Recovery Public Assistance Applicant Packet for Local Government and Special Districts, Governor's Office of Emergency Services.
2. Federal Aid in Disasters, FEMA
3. City of Los Angeles Northridge Earthquake Response Effort, Final Report, Issue No. 7 (9/15/95).
4. Ibid.
5. Disaster Recovery Public Assistance Applicant Packet for Local Government and Special Districts, Governor's Office of Emergency Services.
6. Ibid.
7. San Joaquin County Disaster Recovery Manual, rev. 8/95.

CHAPTER 7

MUTUAL AID

Contents: This chapter contains four sections.

Section	Topic	Page
1	Mutual Aid System California Mutual Aid Program	7-1
2	Mutual Aid for Debris Management Public Works Public Information	7-3
3	Emergency Managements Mutual Aid (EMMA)	7-3
4	Actions to take in assessing mutual aid needs	7-6



STEP 1: MUTUAL AID SYSTEM

Statewide system:

California's disaster planning is based on a statewide system of mutual aid. Each local jurisdiction:

Relies first on its own resources, then calls for assistance:

- ◆ city to city,
- ◆ city to county,
- ◆ county to county, and
- ◆ county to the regional office of the OES,
- ◆ which relays unmet requests to the State.

Master Mutual Aid agreement:

A California Master Mutual Aid Agreement has been adopted by most cities and all 58 counties in California.

This agreement creates a formal structure within which each jurisdiction retains control of its own personnel and facilities, while giving and receiving help whenever it is needed. The State is a signatory to this agreement and provides available resources to assist local jurisdictions in emergencies.

Six regions:

The State of California is currently divided into three administrative regions and six OES mutual aid regions . Regional managers, their staff and any designated state agency representatives constitute the regional emergency management staff. A map of the regions and OES contact names appear in Attachment A.

Table:

The California Mutual Aid Program, channels of coordination, and mutual aid systems are shown in the following table.

CALIFORNIA MUTUAL AID PROGRAM¹ Mutual Aid Systems and Channels of Statewide Mutual Aid Coordination			
COORDINATED BY STATE OES			COORDINATED BY EMSA ^{**}
Fire and Rescue	Law Enforcement	Emergency Services	Disaster Medical
Fire Mutual Aid System	Coroners Mutual aid System	All other emergency services mutual aid not included in other systems.	Disaster Medical Mutual Aid System.
Urban Search and Rescue System	Law Enforcement Mutual Aid System	Volunteer Engineers Mutual Aid System*	
	Search and Rescue Mutual Aid System (non urban)	Public Works Mutual Aid System*	
		Emergency Managers Mutual Aid System*	
		Hazardous Materials Mutual Aid System*	
		Water Agency Response Network (WARN)*	

*Systems currently under development

**Emergency Medical Services Authority



STEP 2: MUTUAL AID FOR DEBRIS MANAGEMENT

Consider entering into a Mutual Agreement with neighboring jurisdictions for debris management when the jurisdiction has exhausted its resources and response capabilities after a disaster.

Examples:

A Model Mutual Aid Agreement is contained in Attachment B; a city or county may consider developing such an agreement with neighboring jurisdictions.

Public works:

A Public Works Mutual Aid Plan and Procedures Agreement, which may provide more specific assistance related to debris management, is under development by the OES Southern Region; jurisdictions may consider adopting a similar agreement. For more information, contact the Emergency Operations and Training Officer at the OES Southern Region, (310) 795-2900.

Public information:

In addition, a Public Information Mutual Aid Plan has been adopted by San Luis Obispo, Santa Barbara, and Ventura Counties. Local governments may find this useful in developing a similar Plan to obtain resources to coordinate public outreach and media activities. Contact the nearest OES Regional Office for more information.

☐ **STEP 3: EMERGENCY MANAGERS MUTUAL AID (EMMA)²**

Purpose: City and county emergency managers in the OES Coastal, Southern, and Inland Regions developed a coordinated emergency management concept called the Emergency Managers Mutual Aid (EMMA) system, which worked very successfully during the Northridge earthquake recovery.

The purpose of EMMA is to provide **professional emergency management personnel** in the form of mutual aid to impacted areas to support disaster operations.

EMMA system: The EMMA system is composed of emergency managers from cities and counties. The State Office of Emergency Services (OES) maintains mutual aid inventories and facilitates mutual aid among Operational Areas (counties) and among OES Regions. OES will also maintain EMMA personnel inventories at the regions and headquarters as they are developed.

Local government managers: City and county managers can provide jurisdictions with invaluable technical assistance and expertise in debris management programs through this program.

Requesting EMMA: To request (EMMA) mutual aid, follow normal mutual aid channels consistent with the California Master Mutual Aid Agreement. Contact the nearest OES Regional Office for more information.

Reimbursement: All associated costs incurred by the jurisdiction providing assistance will be eligible for reimbursement as part of "emergency protective measures" (Category B) described in the State Natural Disaster Assistance Act when a state of emergency has been declared and by Public Law (PL) 93-288 when there is a Presidential declaration of a major disaster. The providing jurisdiction must document all costs and invoice the requesting jurisdiction.

Documentation: Those providing mutual aid will be responsible for maintaining their own logs, time keeping and other

documentation necessary for reimbursement. This documentation must be submitted to their accounting departments so the requesting jurisdiction can be involved appropriately.

Reimbursement: State and federal governments may provide reimbursement for mutual aid when there is a Governor's proclamation of a State of Emergency or a Presidential Declaration of a Major Disaster. **There are no other provisions for state mutual aid reimbursement.**

Liability: Local governments are responsible for providing liability and property damage insurance coverage on apparatus and equipment used beyond their territorial limits.

Injuries: Work related injuries to EMMA personnel will be handled by the assisting jurisdiction under Workers' Compensation which may include the Disaster Service Worker program. No special registration is required as all public employees are considered to be disaster service workers during disaster situations.

EMMA Assignments: EMMA personnel assignments will be restricted to:

- ◆ local government and operational area Emergency Operations Centers,
- ◆ Regional Emergency Operations Centers, and
- ◆ Disaster Service Centers.

12-hour period: Mutual aid will be limited to a 12-hour period between jurisdictions when there is no emergency declaration in effect. It is anticipated that for such events neighboring jurisdictions would be requested.

7-10 days: Mutual aid assignments for declared emergencies will be for a 7 to 10 day period.

Activation

The system can be activated for small, single jurisdictional emergencies or for large-scale disasters involving multiple jurisdictions.

Small scale:

On a small-scale activation requiring mutual aid between two cities within the same Operational Area (county), request assistance of a neighboring jurisdiction through the Operational Area. The Operational Area will be responsible for coordinating and documenting any mutual aid within their Operational Area.

Operational area to another:

When mutual aid is requested from one Operational Area to another, route requests through the OES Region. At this time, the Regional Administrator will activate the EMMA Coordinator.

Region to region:

When mutual aid is requested from one Region to another, direct the request to the requesting jurisdiction's region.

During a multi-region incident, route requests for mutual aid through the State Operations Center (SOC).

☐ **4: ACTIONS TO TAKE**

Table: When evaluating alternatives to staffing and equipment, consider taking the following actions mutual aid agreements

STEP	ACTION
A	Review existing mutual aid agreements
B	Develop a list of mutual aid agreements the jurisdiction is a signatory to and the resources available through each.
C	Explore possibility of entering into discipline-specific mutual aid agreements, such as those for public works, Emergency Management Mutual Aid, or public information.

◆ **STEPS A & B: REVIEW AGREEMENTS**

Review the mutual aid agreements your city or county is a signatory to and list the types of assistance available through those agreements.

Based on this review, your jurisdiction may identify mutual aid agreements that it needs to develop, or, for an existing agreement, become a signatory to.

A Model Mutual Aid Agreement is contained in Attachment B. A city or county may consider developing such an agreement with neighboring jurisdictions specifically for debris management.

◆ **STEP C: EXPLORE DISCIPLINE-SPECIFIC MUTUAL AID AGREEMENTS**

Public works: A Public Works Mutual Aid Agreement, which may provide more specific assistance related to debris management, is under development by the OES Southern Region; jurisdictions may consider adopting a similar agreement. For more information, contact the Emergency Operations and Training Officer at the OES Southern Region, (310) 795-2900.

Public information: In addition, a Public Information Mutual Aid Plan that has been adopted by San Luis Obispo, Santa Barbara, and Ventura Counties, contact OES; local governments may find this useful in developing a similar Plan to obtain resources to coordinate public outreach and media activities.

EMMA program: Also consider the Emergency Managers Mutual Aid (EMMA) program, which is composed of emergency managers from cities and counties. The State Office of Emergency Services (OES) maintains mutual aid inventories and facilitates mutual aid among Operational Areas (counties) and among OES Regions. These emergency managers may be able to provide technical assistance and advice on debris management programs. Contact the nearest OES Regional Office for more information.

ATTACHMENTS

- A. Map of Mutual Aid Regions
- B. Model Mutual Aid Agreement form.

REFERENCES

- ♦ *California State Emergency Plan*, 1988.
- ♦ *Master Mutual Aid Agreement*, OES.
- ♦ *Emergency Managers Mutual Aid Plan, Part One*, 9/12/94

ENDNOTES

1. SEMS Emergency Operations Center Course, Module C3, page 6, Governor's Office of Emergency Services.
2. *Emergency Managers Mutual Aid Plan, Part One*, 9/12/94

CHAPTER 8

CURBSIDE PICKUP PROGRAM

- Primary program:** One of the primary methods used by jurisdictions to remove material after a disaster is a curbside waste pickup program. Cities and counties implement curbside pickup programs to remove debris from the street after businesses and homeowners have placed the materials in front of the property.
- Plan ahead:** Immediately following a disaster, such as a flood or earthquake, the material removed from the street via a curbside pickup program tends to be commingled.
- The initial response to a disaster is to remove the material that poses both a threat to health and safety and prevents access to structures and property. It is unlikely that much of this material will be diverted and recycled unless the local jurisdiction has prepared adequately and implemented a disaster plan with all elements necessary to address the barriers to waste diversion.
- Flexible plan:** A disaster plan must be flexible. Any plan, no matter how well thought out, must be amended at some point in the process. Therefore, those who implement the cleanup must periodically review the operation and be willing to address shortcomings or unforeseen changes in either scope or implementation. Planning is imperative, but no one can anticipate all possible scenarios in addressing a disaster cleanup.
- Contents:** In any curbside pickup program, there are some basic requirements and resulting steps that need to be addressed and implemented. Those steps are listed below followed by a short discussion. A number of steps are integral to any debris management program in general, and as such, specific discussions are contained in either Chapter 2, Pre-disaster Assessment, or Chapter 3, Debris Management Programs. However, the action steps are listed in sequence.

Error!	ACTION	PAGE
1	Quantify/qualify material.	8-3
2	Determine processing and facility needs.	8-5
3	Determine labor/equipment needs.	8-7
4	Secure funds for program.	8-8
5	Determine method to locate curbside waste.	8-9
6	Determine method of implementation.	8-13
7	Identify temporary storage sites.	8-15
8	Identify/establish markets for collected materials.	8-16
9	Review contract requirements.	8-17
10	Develop tracking/documentation.	8-18
11	Develop public information strategy/program.	8-19
12	Develop methods to encourage diversion.	8-20
13	Develop monitoring and enforcement program.	8-21
14	Prepare final report.	8-23
Attachment A	Curbside Pickup Site Identification	8-24

More info:

Also refer to Chapter 17 for case studies on curbside collection programs established by the Cities of Los Angeles and Santa Clarita in response to the 1994 Northridge Earthquake.

☐ **STEP 1: QUANTIFY/QUALIFY MATERIAL**

Estimate types and quantities:

It is useful to estimate the types and amounts of material that may result from a disaster in order to determine potential processing and transportation needs.

However, accurate quantification is probably impossible to obtain until after a disaster strikes. It is generally more valuable to a local jurisdiction to estimate the types of material rather than quantities prior to a disaster in order to determine processing needs and abilities in the area.

Major waste categories:

A general conclusion can be drawn from various studies that have documented the composition of demolition waste. The major waste categories tend to be masonry (concrete, asphalt, brick, rubble), wood, gypsum, and metals.

Pilot program:

In some cases, a pilot program can be tested in the area, but that is only feasible if long-term cleanup operations are expected such as those that occurred in the Los Angeles area following the Northridge earthquake.

Waste stream changes:

A good curbside pickup program will also recognize that the types and amounts of material will change as time progresses.

After the initial debris has been removed, to restore some form of order to the area, local residences and businesses will begin to rebuild. The rebuilding process will generate new flows of material as a result of both demolition and construction activities well beyond the immediate cleanup following a disaster. These activities will also generate wastes that can be more easily segregated, which may allow higher rates of recycling.

There will also be materials generated immediately after the disaster such as plastic drinking water bottles, plastic sheeting, sand bags, and food. The City of Malibu had thousands of sand bags to dispose of after the fires in 1993, and there were thousands of plastic drinking water bottles to deal with after the initial Northridge earthquake response.

☐ **STEP 2: DETERMINE PROCESSING AND FACILITY NEEDS**

Identify operations: As stated above, part of material qualifying/quantifying is to determine current processing abilities and potential future needs. At a minimum, jurisdictions should identify operations currently in the area that process construction and demolition waste and potentially those operations that could process those materials in the future. Document these facilities, their locations and processing capabilities. Make a note if any of these facilities have concrete crushers or tub grinders.

Landfills: In addition to processors, note which landfills in the area are practicing material separation on site as well as any other material recovery facilities in the area. These facilities, in addition to having the ability to process disaster debris, could potentially serve as storage sites and should be identified. These sites could be used for intermediate staging and potentially short-term processing following a disaster.

Recycling options: Also consider your options as far as recycling and disposal sites is concerned. If your recycling facility or landfill is (damaged) closed due to the disaster or the routes to the facilities are blocked, have plans to utilize other facilities operated by neighboring jurisdictions.

It is best to have completed these discussions and reached agreement before the disaster since it might take action by your respective City Council/Boards of Supervisors to authorize the use of these facilities; if not done beforehand, valuable time can be lost in negotiating their use.

See page: Refer to Chapter 2, Pre-disaster Assessment, for more information.

☐ **STEP 3: DETERMINE LABOR/EQUIPMENT NEEDS**

Estimate needs: Estimating equipment and labor needs, prior to a disaster occurring, with any accuracy is nearly impossible. However, it is very useful to determine what equipment is currently available that can be used in response to a disaster.

Mutual aid: Furthermore, if it has been determined that the available equipment will likely be inadequate, the local jurisdiction may want to consider entering into a mutual aid agreement with neighboring jurisdictions to supply personnel and equipment in the event of a disaster. A model mutual aid agreement is contained in the following attachments in this section (refer to Chapter 7, Mutual Aid, for more information).

EMMA: A new program established by the Office of Emergency Services during the Northridge earthquake recovery is the *Emergency Managers Mutual Aid* program. Through this program experienced emergency managers from public agencies will be available to assist jurisdictions in recovery operations, such as setting up debris management programs.

Local businesses: The local jurisdiction may also consider documenting the local businesses that are involved in the demolition as well as waste transport and handling operations. If manpower needs arise, as a result of a disaster, these businesses may be available on a contract basis.

The City of Los Angeles concluded that utilizing the resources of existing businesses would be the quickest route to implement a curbside pickup program as well as help establish a waste separation and recycling infrastructure that would be in place after the rebuilding period passed.

CCC and EDD: Another option that jurisdictions may consider for manpower needs is to utilize the resources of the California Conservation Corps (CCC) or the Employment Development Department (EDD).

While both the CCC and EDD may be a source of manpower for a community recovering from a disaster, they should both be considered long-term options rather than avenues for

immediate manpower needs following a disaster. Negotiating a contract for personnel from either agency will take time; consequently, this should not be considered a viable option in the primary response to a disaster.

Liability:

There are also liability issues to consider when using volunteers or staff from the CCC or EDD. They may be injured or damage private property during the course of their cleanup activities. See Attachment B for sample waiver forms.

See page: Refer to Chapter 2, Pre-disaster Assessment for more information.

☐ **STEP 4: SECURE FUNDS FOR PROGRAM**

Secure funds:

Plan ahead and secure funds. The most important part of a successful curbside collection program is pre-planning. Planning is necessary if the program is to be implemented in a timely manner, and funding is necessary if it is to be implemented at all.

Even if the program is eligible for reimbursement from a federal program such as FEMA, the FEMA reimbursement will not occur immediately. There needs to be some sort of funding mechanism in place until reimbursement occurs.

Note: FEMA may/will not reimburse for donated monies or services.

See page: Refer to Chapter 6, Reimbursement, for more information.



STEP 5: DETERMINE METHOD TO LOCATE CURBSIDE WASTE

Locate waste:

Regardless of the method used, the jurisdiction should determine how it plans to assess the amounts and types of material placed on the curbside for pick-up.

Site identification: A discussion of Geographic Information System (GIS) versus canvassing the streets is contained in the discussion below titled "Site Identification."

Example:

The City of Los Angeles chose to send out staff with maps to mark the streets that had rubble to be hauled. The City determined this was the most effective method to maximize the cleanup crews' time and transporters' hauling capacity as well as to minimize tip fees by transporting source separated material. Others may choose to use more sophisticated methods such as GIS. Either method will maximize equipment and resources when collecting the debris.

Scout: neighborhoods:

Scout neighborhoods. The City of Los Angeles stressed that it is extremely important to identify the types and locations of debris piled up in the streets prior to dispatching crews to collect it.

This allows for consolidation of similar types of debris (i.e. wood, aggregate, metal, wallboard, insulation) so that full loads of like material can be brought to source separated processing stations, thus minimizing transportation and disposal costs and increasing the likelihood that the materials will be recycled.

Debris identification:

Debris identification can be accomplished in various ways. In hilly areas the City of Los Angeles scoped the neighborhoods using City staff contractors and marking types of materials and locations on a map. Some contractors will do this prior to dispatching crews, but not necessarily. This is probably something that should be negotiated in the contract.

Although the City of Los Angeles chose to blanket the neighborhoods with mobile crews, a GIS could also be used for identifying locations. Regardless of the method, the

primary goal is to maximize capacity of the cleanup crews while collecting as much similar types of debris as possible.

CURBSIDE PICKUP SITE IDENTIFICATION

Background:

When implementing a curbside pickup program following a disaster, planning is imperative to maximize the resources available. Regardless of the method used, some preliminary field work is needed to ensure that similar loads of debris, as well as full loads of materials, are transported to recycling and disposal facilities. To accomplish the preliminary site mapping, two approaches can be taken.

They are as follows:

1. GIS MAPPING

A global information system (GIS) can be used to map out a targeted area and pre-plan material pickup schedules to maximize both resources and equipment. In its simplest application a GIS is used to electronically collect the attributes of a site in a hand-held controller.

The system's software then determines a three-dimensional Global Positioning System position for you. Various software packages can compile the information in numerous fashions which best fit the needs of your organization.

Pros/cons

The advantages of GIS is that it is quick, offers the ability to evaluate the data in several forms, and offers several competing forms of software and hardware.

The disadvantages include the need to purchase/lease the software and hardware and the need to still go out into the field to identify the pickup locations.

Furthermore, depending on the system, additional time may be needed to learn the system before it can be adequately implemented.

However, if a local agency already has a GIS, or if there is a potential need for one in the future, implementing a GIS for curbside pickups in response to a disaster may be justified.

2. CANVASING STREETS

Identify on map

An alternative to using a GIS is to have staff canvas the streets and identify the types of materials in the area to increase source separated recycling opportunities. Locations of material piles can be marked on a map. This information can be used to determine crew size, pickup routes as well as primary disposal and recycling locations. These would be developed before the disaster.

The City of Los Angeles chose this method over GIS. The City felt that the learning curve for the GIS that they had would take too long. The City preferred to dedicate the time towards immediate cleanup efforts.

Advantages

The advantages to canvassing the streets are:

- ◆ immediate results,
- ◆ almost no learning curve,
- ◆ avoided cost of a GIS, as well as the fact that
- ◆ the staff must patrol the streets even with a GIS to locate the material piles.

Decision factors

An individual jurisdiction must decide which method to use to identify locations for curbside pickups. The decision is based on various factors including:

- ◆ cost,
- ◆ availability of systems,
- ◆ response time,
- ◆ size of area, and
- ◆ future needs.

Regardless of which method is chosen, it is extremely important to plan pickup locations and routes to minimize resources and disposal costs and to maximize reuse of materials.

☐ **STEP 6: DETERMINE METHOD OF IMPLEMENTATION**

Who will implement: This portion of the program has several aspects. The jurisdiction must determine who will implement the program: the local government employees, or contracted private businesses.

Materials to collect: Next, the type of material collected must be determined. This will determine the markets and facilities needed to process the materials.

Will commingled waste be collected or only source separated waste? Commingled waste requires additional labor and time to separate the materials, which can add significantly to the cost of and length of time to operate the program.

The City of Los Angeles collected all waste at the curb, but indicated that if this program were implemented again, it would require the waste to be separated by type at the curb if the City was to pick it up at no cost. The City of Santa Clarita implemented its program in this fashion with great success.

Source separate: Consider collecting only source separated material at the curb. Although the City of Los Angeles did not institute this requirement in its curbside pickup program, staff indicated that source separation is something they would require in future disaster cleanups.

The City of Santa Clarita imposed this requirement during cleanup of its earthquake debris and made it work. This would require extensive notification that only source separated material would be collected for free. Mixed material could be tagged, and if not removed by the owner within a given time period, be collected for a fee. This could significantly reduce disposal costs, as the majority of materials could go to source separated processing facilities.

Segregate waste: Dedicate resources towards segregating waste at curbside prior to commingling during collection. The City of Los Angeles initially collected waste, as is, at the curbside. Unfortunately, a small amount of contamination, such as wood in a pile of concrete rubble, would require the entire

load to go to a mixed waste disposal facility or recycling facility. The resulting tip fee would be considerably more than that at a segregated processing facility.

The City then began using crews to pick through piles of debris that had slight commingling of waste to produce individual piles of separated waste that could be hauled to source separated facilities at a reduced disposal cost.

Suggestion: Any jurisdiction that is considering using this type of manpower should investigate the potential use of crews from the California Conservation Corps (CCC) or the Employment Development Department (EDD).



STEP 7: IDENTIFY TEMPORARY STORAGE AREAS

- ◆ Determine need for temporary storage areas
- ◆ Develop criteria for siting temporary storage or pre-staging areas.
- ◆ Make a list of all possible sites: public and private
- ◆ Consider pre-approving sites and receiving permit in advance, to be activated upon declaration of disaster/emergency.
- ◆ Identify permit and environmental compliance requirements and time needed to process.
- ◆ Decide the type and level of environmental assessment and monitoring needed to be performed at site.
- ◆ Negotiate in advance the use or lease of public or private land.
- ◆ Develop Site Operation Plan.
- ◆ Develop Site Restoration Plan.

More information: Refer to Chapter 4, Temporary Storage Sites, for information.

☐ **STEP 8: IDENTIFY/ESTABLISH MARKETS FOR COLLECTED MATERIALS**

Identify end-uses and markets:

- ◆ Determine end-uses and market specifications for disaster debris.
 - ◆ List the local brokers and processors, materials they handle, and end-uses.
 - ◆ Identify market specifications for the selected end-uses.
 - ◆ Identify processing requirements for selected end-uses.
- ◆ Identify potential markets.
 - ◆ List the existing markets.
 - ◆ If located in or near a Recycling Market Development Zone, list the recycling businesses within the Zone, the secondary materials they accept and process, and the end-products.
 - ◆ List local, state, and national waste exchanges available.
 - ◆ Identify potential projects within your city/county programs for materials collected (e.g., parks, public works).
- ◆ Identify markets still needed after evaluating existing, available markets for materials and quantities projected.
- ◆ Identify market barriers.

More information: Refer to Chapter 2, Pre-disaster Assessment, for more information.

☐ **STEP 9: DETERMINE CONTRACT REQUIREMENTS**

Negotiate beforehand:

Although contract negotiations may not occur until after a disaster occurs, it is important to select the type of contract that meets your needs best. This is also the mechanism through which a jurisdiction can ensure that diversion activities are included in the program.

Sample contracts:

Chapter 5, Contracts, contains excerpts from five contracts that have incorporated diversion language into the contract provisions.

- 1) City of Santa Clarita cleanup contract, 1994 Northridge Earthquake;
- 2) City of Oakland, Master Contract, 1991 Firestorm;
- 3) City of Los Angeles, Building Demolition contract, 1994 Northridge Earthquake;
- 4) City of Los Angeles, Unit Price Contract, 1994 Northridge Earthquake; and
- 5) USEPA contract for Household Hazardous Waste collection, 1995 floods.

In addition several sample contracts are included as attachments to Chapter 5, which can be used as a guide. They include sample contracts developed by FEMA .

Review existing contracts:

A jurisdiction should review its existing contracts to determine if there are any relevant provisions dealing with disaster debris or if the contract can be used as the vehicle to provide emergency cleanup work, either as written or modified.

More information: Refer to Chapter 5, Contracts, for more specific information.

☐ **STEP 10: DEVELOP TRACKING/DOCUMENTATION SYSTEM**

Document: Documentation is necessary to verify the program is being implemented in the fashion envisioned and to make program changes as needed. Moreover, adequate documentation is necessary to obtain reimbursement from FEMA.

FEMA policy: FEMA policy states that it will reimburse the least cost method of waste removal. However, if a jurisdiction can document that there is an existing policy or that the governing body has taken official action that mandates recycling or diversion, FEMA may be more likely to reimburse costs for locally approved procedures. A debris management plan

Furthermore, it is possible to recycle at a lower cost than disposal as proven by documentation by the City of Los Angeles following the Northridge earthquake (see Attachment B in Chapter 6).

The City of Los Angeles used an authorization letter to encourage haulers to take the materials to a recycling facility.

Documentation: Document time and cost expenditures. This is extremely important if a jurisdiction anticipates reimbursement from the Federal Emergency Management Agency. Comprehensive documentation of all expenditures related to addressing a disaster is necessary for reimbursement through FEMA.



STEP 11: DEVELOP PUBLIC INFORMATION STRATEGY/PROGRAM

- Advertise program:** Notify residents of program. This point may seem obvious, but there are several potential barriers to disseminating information on a curbside pickup program. A City's public outreach program should evaluate all forms of media including: newspaper ads, radio public service announcements, and television public access stations. Be aware of communities where multiple language ads will be necessary. Also, be prepared to pay for the ads. The City of Los Angeles was quoted a price of \$16,000.00 for a one-day quarter-page ad in the *Los Angeles Times*.
- Coordinate with OES:** Also be sure to coordinate the dissemination of information on diversion programs with your public information office and the Office of Emergency Services public information effort.
- Public ed:** Finally, the jurisdiction must determine the length of the curbside program, as well as the method of informing the public. If the program is to cease on a given date, adequate resources must be spent informing the public.
- Additional thought must be given towards any non-English speaking sectors of the jurisdiction, as well as the visually or physically impaired, to inform them of the program implementation and conclusion. For example, the City of Los Angeles used the Good Year Blimp to advertise the end of their curbside program. (See Chapter 17 for a case study of the City of Los Angeles' Northridge earthquake response for more information).
- More information:** Also, refer to Chapter 10, Household Hazardous Waste Collection Program.

☐ **STEP 12: DEVELOP METHODS TO ENCOURAGE DIVERSION**

Incentives:

Institute incentive for haulers. City staff indicated that one of the most difficult aspects of the program was both educating the haulers on the preferable sites to haul the material to and then ensuring that they followed through on the instructions.

As indicated above, the City placed recycling facilities in higher preference to mixed disposal facilities. However, the recycling facilities may not be the most preferable facility in the hauler's mind.

The hauler may have chosen a facility based on distance, familiarity, or absence of truck scales on route rather than recyclability of material or disposal cost as the City bore the brunt of these costs.

The City developed a training guide entitled "Northridge Earthquake Recycling Requirements for C-21 Contractors," which lists the City's requirements, materials specifications, and recycling and disposal facilities. All haulers were given the manual and trained on program guidelines.

See page: Refer to Chapter 2, Pre-disaster Assessment, for more information.

☐ **STEP 13: DEVELOP MONITORING AND ENFORCEMENT PROGRAM**

Monitoring:

Even with the training, the City needed to constantly police the haulers to verify that the loads were taken to the preferred locations. An attempt was made to designate a primary disposal/recycle location on a ticket to be presented to the facility operator.

If the load was rejected, or the facility was full, the ticket would be stamped at the facility and the load was to be taken to the next facility listed.

This was only partially successful. In some cases the drivers changed the location listed on the tickets avoiding the hierarchy altogether. This process is also very resource intensive, as inspectors are needed at each cleanup site prior to hauling to mark the tickets.

Incentive:

In conclusion, the City felt the method that had the most potential for success in ensuring that the high priority facilities (recycling) were visited first, involved some sort of incentive program.

If the drivers received some sort of perk for adhering to the criteria, more material would be recycled, and a great deal of money would be saved in the form of reduced tipping fees and reduced staff time dedicated towards policing cleanup crews and haulers.

Inspectors:

Continual oversight by inspectors is needed. As discussed in the previous item, oversight is needed to ensure that the hauler goes to the preferred facility. Additional oversight is needed for the crews loading the debris to ensure that material separation techniques are used.

Inspectors, or incentive programs, are needed to ensure that full loads are taken to the processing facilities rather than half empty trucks. Under the City's initial system, there was no incentive for a hauler to completely fill a truck before going to the disposal/recovery facility. The haulers were paid for their time rather than by weight. The City determined that it was necessary; otherwise, there would be

no incentive to haul low-density materials such as wood and insulation.

Case Studies:

Refer to Chapter 17 for two case studies of curbside collection of disaster debris after the 1994 Northridge earthquake--City of Los Angeles and City of Santa Clarita.

☐ **STEP 14: PREPARE FINAL REPORT**

Why needed: A final report of program activities and results may be required for FEMA reimbursement for diversion programs implemented. This report allows jurisdictions to evaluate program success and areas for improvement and is crucial for future disaster debris planning purposes.

Major topics: The Final Report's major topic areas are presented below as an example of the types of program information that should be collected.

- ◆ program goals;
- ◆ operational approach;
- ◆ facilities used;
- ◆ program costs for tipping fees: recycling and disposal facilities; contractors (C-21 for debris removal/loading, and trucking);
- ◆ landfill space savings;
- ◆ tonnage and % of materials recycled and disposed of;
- ◆ recycling rates by material type;
- ◆ program costs by ton - recycling compared to disposal;
- ◆ demonstrated program effectiveness; and
- ◆ lessons learned and areas for improvement.

ATTACHMENTS

A. Curbside Pickup Site Identification

REFERENCES

- ◆ *Debris Removal Guidelines for State and Local Officials*, FEMA, DAP-15 (Draft) Dec. 1991 Modified.
- ◆ Emergency Managers Mutual Aid Program, Draft, Governor's Office of Emergency Services.
- ◆ *Northridge Earthquake Recycling Requirements for C-21 Contractors*, City of Los Angeles, Environmental Affairs Department.

CHECKLIST

CHAPTER 8

CURBSIDE PICKUP PROGRAM

STEP 1: Identify/quantify material

- ◆ Identify types of materials.
- ◆ Estimate quantities of materials.
- ◆ Include materials generated as a result of disaster recovery.
- ◆ Consider setting up pilot program to determine material types/quantities.

STEP 2: Determine processing and facility needs

- ◆ Identify the following:
 - ◆ operations/facilities in the area that process construction and demolition waste;
 - ◆ facilities' current processing abilities and future needs;
 - ◆ landfills practicing material separation on-site;
 - ◆ material recovery facilities in the area;
 - ◆ temporary storage areas at facilities, public/private land;
 - ◆ markets for collected materials;
 - ◆ processing requirements for materials based on their end-uses.
- ◆ List reuse facilities to establish their roles and types of materials accepted.

STEP 3: Identify labor and equipment needs

- ◆ Estimate labor needs.
- ◆ Estimate equipment needs.
- ◆ Survey equipment on hand and that which can be borrowed from other jurisdictions or private businesses.
- ◆ Document businesses involved in demolition, waste transport and handling operations.
- ◆ Negotiate agreement for special labor: California Conservation Corps or State Employment Development Department.
- ◆ Activate/establish Mutual Aid Agreement.

STEP 4: Secure program funding in advance

- ◆ Plan ahead by identifying local or private funds to start-up program
- ◆ General Fund;

- ◆ private funds; and
- ◆ loan.

STEP 5: Select method to locate curbside waste

- ◆ Develop method to identify and map sites and plan routes
- ◆ Geographic Information System;
- ◆ canvassing streets;
- ◆ hotline.
- ◆ Prepare collection plan including haulers and/or demolition contractors, routes, recycling facilities.
- ◆ Divide area into zones and assign subcontractors.
- ◆ Obtain all necessary forms from property owners (right of entry, waiver release, waiver of encroachment permit).
- ◆ Determine if air or water quality permits are required.

STEP 6: Determine method of implementation

- ◆ Decide who will implement the program: government employees/contractor.
- ◆ Decide material types to be collected.
- ◆ Decide how will material be collected: source separated, commingled, bins.
- ◆ Prepare training booklet for contractor staff; train contractors.
- ◆ Provide plan for property owners who choose to clean up independently .

STEP 7: Identify temporary storage areas

- ◆ Determine need for temporary storage areas.
- ◆ Develop criteria for siting temporary storage or pre-staging areas.
- ◆ Make a list of all possible sites: public and private.
- ◆ Consider pre-approving sites and receiving permit in advance, to be activated upon declaration of disaster/emergency.
- ◆ Identify permit and environmental compliance requirements and time needed to process.
- ◆ Decide the type and level of environmental assessment and monitoring needed to be performed at site.
- ◆ Negotiate in advance the use or lease of public or private land.
- ◆ Develop Site Operation Plan
- ◆ Develop Site Restoration Plan.

STEP 8: Identify/establish markets for collected materials

- ◆ Determine end-uses and market specifications for disaster debris.
- ◆ List the local brokers and processors, materials they handle, and end-uses.
- ◆ Identify processing requirements for selected end-uses.
- ◆ Identify potential markets.
- ◆ List the existing markets.
- ◆ List the recycling businesses in nearby Recycling Market Development Zone(s); the secondary materials they accept and process; end-products.
- ◆ List local, state, and national waste exchanges.
- ◆ Identify potential city/county projects for materials collected.
- ◆ Identify market barriers.

STEP 9: Review contract requirements

- ◆ Determine contract to be used: Model Time & Material, Model Lump Sum, Model Unit Price, Alternate Bid.
- ◆ Ensure diversion language is included.
- ◆ Include non-compliance fee language.

STEP 10: Develop tracking/documentation system

- ◆ Develop tracking mechanism: facility, tonnage and materials disposed/diverted.
- ◆ Verify disposal/diversion: weight tickets, authorization letter, facility billing; contractor weekly load verification.
- ◆ Train inspectors to monitor contractor compliance.
- ◆ Institute non-compliance fee.

STEP 11: Develop public information program/strategy

- ◆ Advertise program to public and contractors through media
- ◆ evaluate all forms of media: newspaper, radio public service announcements, public access television;
- ◆ consider coordinating outreach programs with nearby jurisdictions also affected by the disaster.
- ◆ Target materials to non-English speaking sectors of the population as well as the visually or physically impaired.

STEP 12: Develop methods to encourage diversion

- ◆ Institute incentives for haulers.
- ◆ Develop a training guide outlining materials specifications, facilities.
- ◆ Consider instituting through contracts non-compliance fees for not recycling.

STEP 13: Develop monitoring and enforcement program

- ◆ Dedicate sufficient resources to ensure program success (e.g. an adequate number of inspectors is assigned to the program).
- ◆ Develop a non-compliance fee.
- ◆ Establish guidelines for compliance and incorporate as part of contract.
- ◆ Develop methods to monitor and enforce. recycling/diversion guidelines.

STEP 14: Prepare final report

- ◆ May be required for FEMA reimbursement for diversion programs implemented.
- ◆ Allows jurisdictions to evaluate program success and areas for improvement.
- ◆ Crucial for future disaster debris planning purposes.
- ◆ Major topic areas
 - ◆ program goals;
 - ◆ operational approach;
 - ◆ facilities used;
 - ◆ program costs for tipping fees: recycling and disposal facilities; contractors (C-21 for debris removal/loading, and trucking);
 - ◆ landfill space savings;
 - ◆ tonnage and % of materials recycled/disposed of;
 - ◆ recycling rates by material type;
 - ◆ program costs by ton - recycling compared to disposal;
 - ◆ demonstrated program effectiveness; and
 - ◆ lessons learned and areas for improvement.

CHAPTER 9

BUILDING DEMOLITION PROGRAM

Background:

This chapter sets forth general guidelines for establishing a building demolition program, emphasizing diversion (reuse, recycling) of waste generated as a result of the demolition. The information presented here is taken primarily from the:

- ◆ City of Los Angeles' building demolition and debris removal program initiated after the 1994 Northridge earthquake, and the
- ◆ County of Humboldt's demolition program after the 1992 earthquakes.

These demolition programs are offered as examples of how two jurisdictions approached the task of setting up such a program.

In addition, ideas on how to maximize diversion opportunities, and hints and policy actions undertaken by other jurisdictions after past disasters are offered to help others avoid common pitfalls in implementing a building demolition program.

Contents:

This chapter consists of 8 sections as follows:

Section	Topic	Page
1	City of Los Angeles Building Demolition and Debris Removal Program (1/94)	9-2
2	Planning phase	9-4
3	Pre-demolition phase	9-5
4	Demolition phase	9-9
5	Post-demolition phase	9-22
6	Diverting demolition debris	9-23
7	Humboldt County demolition program (4/92)	9-24
8	Hints and policy actions	9-26

☐ **1: CITY OF LOS ANGELES BUILDING DEMOLITION AND DEBRIS REMOVAL PROGRAM¹**

Source: The information below is reproduced from the document entitled, *Information Regarding Procedures for Management of Northridge Earthquake Related Building Debris*, May 6, 1994, compiled by the City of Los Angeles, Environmental Affairs Department.

City-sponsored program: This section presents an overview of the building demolition and debris removal program established by the City of Los Angeles after the 1994 Northridge earthquake.

Because a majority of the residents and business owners affected by the earthquake did not have earthquake insurance, the City offered demolition services at no cost. Because this was a City-sponsored program, FEMA reimbursement was available to the City.

To qualify, a building must have had either greater than 50% damage or greater than 35% of its structural system compromised.

Insurance: If the building owner had insurance that covered demolition, the City was required by FEMA to seek reimbursement for the cost of carrying out the demolition, to the extent of insurance coverage for demolition and debris removal.

Two components: The City-sponsored program had two components.

1. The first component was for buildings that presented an immediate and imminent hazard to the public.
2. The second component was for buildings that did not present an immediate and imminent hazard but which did post a hazard.

There were many buildings in the second category, and the City ordered them to be either repaired or demolished. Owners of these buildings had a choice whether to have their buildings:

- ◆ repaired privately,
- ◆ demolished by the City, or
- ◆ demolished privately.

Private demolition:

For property owners who chose to have their buildings demolished privately, hiring a qualified demolition contractor was the desired approach.

Property owners were encouraged to take the following two steps to ensure that the contractor was licensed by the State of California as a demolition contractor (C-21 classification).

1. Obtain the contractor's name, license classification, and license number, and
2. Call the Contractors License Board to check if the license is current and in the correct classification.

Demolition hazards:

Property owners choosing to hire a private contractor to demolish a building must be aware that demolition work can pose a hazard to the health and safety of the individual conducting the demolition.

Licensed demolition contractors should be aware of these hazards and act accordingly. The building owner also has responsibility to ensure that proper health and safety precautions are taken.

Flow chart:

The City of Los Angeles developed a flow chart document of 25 steps to take in a building demolition. The flow chart is found in Attachment A.

☐ 2: PHASES IN A BUILDING DEMOLITION PROGRAM

Sources: Contract language in the City of Los Angeles' Demolition contract, July 1995.

Information Regarding Procedures for Management of Northridge Earthquake Related Building Debris, May 6, 1994, compiled by the City of Los Angeles, Environmental Affairs Department.

Four phases: The following illustrates the planning phase of a building demolition program in addition to the City of Los Angeles' process to establish a building demolition program after the 1994 Northridge earthquake.

The Demolition Program was divided into three phases; a planning phase has been added.

- A. Planning Phase
- B. Pre-demolition activities
- C. Demolition activities
- D. Post-demolition activities

PHASE 1: PLANNING

Federal program:

- ◆ Review Section 403 (Essential Services) of the Stafford Act. See Attachment B for a write-up describing the Public Assistance Building Demolition Program². This information can guide the jurisdiction in selecting the type and scope of building demolition program to establish based upon eligible federal funding for the program.

PHASE 2: PRE-DEMOLITION

Steps: Steps identified in the pre-demolition phase of the demolition process are listed below.

STEP	ACTION	PAGE
1	Establish a demolition plan.	9-5
2	Identify affected properties.	9-6
3	Conduct historic preservation review.	9-6
4	Prepare video documentation.	9-7
5	Establish haul routes.	9-7
6	Obtain waivers and releases.	9-7
7	Prepare contracts with waste diversion provisions.	9-7
8	Select contractor.	9-8



STEP 1:

ESTABLISH A DEMOLITION PLAN

- ◆ Establish demolition procedures.
- ◆ Develop a safety plan for the project which meets all state and federal regulations.
- ◆ Prepare demolition technical specifications.

Sample:

For a sample demolition plan, refer to the City of Los Angeles' July, 1995, demolition contract in Attachment C.



STEP 2:

IDENTIFY AFFECTED PROPERTIES

The following information can be entered into a computer database for ease in tracking the demolition work and for reimbursement and auditing purposes.

- ◆ Prepare background maps. Include sufficient information for identification and bidding and demolition purposes.
- ◆ Develop listing of parcels, containing addresses, owners' names and addresses, percentage of damage, and assessor's parcel number.
- ◆ Determine utility information for each parcel site.



STEP 3:

CONDUCT HISTORIC PRESERVATION REVIEW

First actions:

- ◆ Consult with joint preservation team (FEMA/OES) to identify and review property that is included in a local, state, or national register of historic properties, districts, or sites.
- ◆ Conduct CEQA/NEPA review, if necessary

Funding denied:

Federal funding may be denied if FEMA is not given proper assistance and opportunity to comply with the historic preservation review process prior to initiation of construction or other actions which impact historic properties.

In addition, federal funding may be denied if FEMA cannot comply with NEPA before work begins on a Disaster Assistance Project which may impact the environment.

More information:

For more information, refer to Chapter 16, Federal Public Assistance Program on the Historic Preservation Review and Environmental Review Requirements.

☐ **STEP 4: PREPARE VIDEO DOCUMENTATION**

- ◆ Make ground level video film and still photographic records of affected parcels prior to the commencement of and immediately after cleanup operations.
- ◆ Record condition of non-participating, adjacent properties, as seen from the road.

Requirement: For verification purposes, FEMA requires that "before" and "after" photographs be taken of the structure that is being demolished.

☐ **STEP 5: ESTABLISH HAUL ROUTES**

- ◆ Prepare the maps for haul routes for debris removal.
- ◆ For the removal of hazardous materials, prepare maps for haul routes that comply with the requirements of the California Highway Patrol listed in Sections 31300 to 31308 in the California Vehicle Code.

☐ **STEP 6: OBTAIN WAIVERS AND RELEASES**

- ◆ Obtain all necessary right of entry, waiver release, and other required forms from property owner(s), if necessary.
- ◆ Obtain and pay for all necessary permits to perform the work

Sample: For a sample waiver release form, see Attachment D.

☐ **STEP 7: PREPARE CONTRACTS FOR CLEANUP WORK**

Diversion language: To ensure that planned diversion activities are carried out, incorporate contract provisions that specify recycling, reuse, or other diversion techniques for the demolition waste stream.

Following is a list of activities that can be included in each contract:

- ◆ demolition;
- ◆ recyclable material separation and removal, where applicable;
- ◆ traffic control;
- ◆ debris removal, haulage, and recycling or disposal dust control;
- ◆ daily site maintenance of any property on public way, including streets, alleys, sidewalks, etc.;
- ◆ raking clean all dirt surfaces;
- ◆ sweeping all improved surfaces; and
- ◆ fencing off demolition area for safety purposes.

More information:

For more detailed information on the contracting process and examples of types of contracts used after a disaster, refer to Chapter 5, Contracts.



STEP 8: SELECT CONTRACTOR

Follow procedures:

In an emergency or disaster, exceptions can apply to the contracting process. In any event, be sure to follow proper contracting procedures to avoid compromising federal or state reimbursement for debris-related programs.

- ◆ Select contractor(s).
- ◆ Provide information to firms on bid requirements.
- ◆ Develop list of bidders from interested and properly licensed contractors responding to notification.
- ◆ Prepare bid package specifications and cost estimates.
- ◆ Conduct bid solicitation.
- ◆ Attend public bid opening, log all bids, notify the lowest responsible bidder of the outcome.
- ◆ Select contractors through competitive bidding in accordance with City emergency contract procedures.

PHASE 3: DEMOLITION

Third phase: Certain preparatory work must precede the primary task of demolishing structures, debris removal, and cleanup. The City of Los Angeles followed the steps below in its demolition process:

Error! Bookmark not defined.STEP	DEMOLITION PHASE ACTION	PAGE
1	Identify hazardous materials in damaged buildings	9-10
2	Obtain proper City permits	9-12
3	Deploy field staff	9-13
4	Notify residents/utilities of demolition schedule	9-13
5	Remove hazardous materials and dispose of them properly	9-13
6	Recycle demolition debris	9-14
7	Develop a plan to handle special wastes	9-15
8	Demolish building	9-21
9	Remove, transport, and dispose of remaining debris	9-22

☐ STEP 1: IDENTIFY HAZARDOUS MATERIALS IN DAMAGED BUILDINGS

Keep separate: Keep hazardous materials separated from non-hazardous materials, and dispose of them separately. If certain types of hazardous materials are mixed with non-hazardous debris, the debris may become hazardous and require specialized disposal that may be costly.

Medical buildings: Medical buildings and office buildings may contain medical wastes, radioactive materials, or other hazardous wastes. Residential and commercial buildings may contain paint, hazardous cleaning chemicals, chemicals from hobby or automotive repair activities.

Asbestos: Any building built prior to 1980 may contain asbestos. Even buildings constructed after 1980 can contain some asbestos. If the presence of asbestos is suspected, a registered

asbestos consultant or other qualified health and safety specialist should be consulted to determine whether or not asbestos is present. (See Attachment E for more information on recycling asbestos).

Recycling:

If it is safe to enter the building and inspect for hazardous materials, determine whether it is safe to recycle the debris. If asbestos is suspected, a certified asbestos consultant or other qualified health and safety specialist should make this determination.

Recycle only if there are no hazardous materials, or if they can be safely separated from the remainder of the debris and disposed of properly.

Procedure for buildings that are unsafe to inspect prior to demolition.

Unsafe buildings

If it is unsafe to enter a building to determine if there are hazardous materials present, consider the procedures below as developed by the City of Los Angeles:

- ◆ **When can't inspect building.** If it is not possible to inspect the building to determine the presence of hazardous materials or asbestos, then demolish the building without removal of hazardous materials.
- ◆ **When can't rule out asbestos presence.** If it is not possible to rule out the presence of asbestos, do not recycle the demolition debris. During the demolition process, hazardous materials may be removed if it is safe to do so. Recycle demolition debris only when it is determined by a qualified health and safety professional that it is safe to do so. Otherwise, all non-hazardous demolition debris should be transported directly to a landfill.
- ◆ **Sample debris for asbestos.** Demolition debris from buildings which are unsafe to inspect must be sampled to determine if there is asbestos present.

- ◆ If the debris contains less than 1% asbestos by weight, the debris may go to a Class III landfill (accepts no liquid or hazardous wastes).
- ◆ If there is more than 1% asbestos by weight, the debris must go to a landfill permitted to accept asbestos waste.

Cal/OSHA requires that for work conducted on buildings which contain asbestos (0.1% definition), the provisions of California Code of Regulations, Title 8, Section 1529, be followed.



STEP 2:

OBTAIN PROPER PERMITS

Obtain all permits necessary for demolition, cleanup, utility line capping, hauling away, and other related tasks.

The following is a list of the City of LA permit requirements. The permits for your jurisdiction may or may not be similar and are presented here only as an example.

- ◆ Los Angeles City demolition permit;
- ◆ Fire Department Division 5 permit if asbestos will be removed prior to demolition;
- ◆ sewer cap permit;
- ◆ water meter on the hydrant;
- ◆ drainage pattern surveyed;
- ◆ Rule 1403 notification form (SCAQMD notification) (or applicable Air Quality Management District);
- ◆ If the building to be demolished is more than three stories high or greater than 36 feet in height, a Cal/OSHA permit is required.

☐ **STEP 3: DEPLOY FIELD STAFF**

- ◆ Organize and deploy field staff.
- ◆ Cap sewer. Verify that water, gas, and electricity services have been disconnected prior to commencing demolition.
- ◆ Provide and install a 8' chain link fence along the perimeter of each property.
- ◆ Provide and install traffic control signs, barricades, canopies, and flagmen.
- ◆ Obtain and pay for a temporary water meter from Department of Water and Power, and pay for water usage for dust control.

☐ **STEP 4: NOTIFY RESIDENTS AND UTILITIES**

- ◆ Notify residents of demolition schedule, and post "Advance Construction" notice sign two days before commencing work.
- ◆ Notify Dept. of Public Works inspector before commencing work.
- ◆ Underground Service Alert (USA). Prior to demolition, Contractor shall obtain a USA Inquiry Number.

☐ **STEP 5: REMOVE HAZARDOUS MATERIALS AND DISPOSE OF THEM PROPERLY.**

Household

Small amounts of HHW (not greater than 15 gallons or 125 **hazardous waste**:pounds) may be transported by homeowners for disposal at a HHW roundup or similar event.

Hazardous wastes in amounts that exceed 15 gallons or 125 pounds must be transported by a properly licensed hazardous waste hauler. Hazardous waste haulers are prepared to implement a variety of specific requirements for these loads including special handling and disposal at a hazardous waste disposal site.

Any questions about handling hazardous waste in quantities greater than 15 gallons or 125 pounds, contact your

jurisdiction's Household Hazardous Waste Coordinator or hazardous waste unit.

**Medical/
biohazardous
waste:**

Untreated medical wastes/biohazardous wastes are not acceptable at local landfills or other solid waste facilities unless they are first treated and rendered non-infectious.

Contractors demolishing medical facilities are advised to contact the medical facility's managers to provide the proper removal and disposal of medical waste or to contact a licensed medical/biohazardous waste contractor/hauler.

The agency responsible for regulating medical wastes is the State of California, Department of Health Services, Environmental Management Branch, 916-327-6091.



STEP 6: RECYCLE DEMOLITION DEBRIS

Plan to recycle:

Recycling of demolition debris should be planned as an integral part of the demolition process. (Contact your jurisdiction's solid waste or recycling coordinator for specific program information.)

Cost-effective:

Recycling demolition debris is often less expensive than disposal in a landfill. List the demolition materials that can be recycled. For example, in the Los Angeles area these materials included metals, concrete, asphalt, wood, yard trimmings, dirt, and bricks. Note if facilities exist for both source-separated materials and for mixed materials; the latter can be further sorted for recycling for a fee.

Safe to recycle:

Before recycling begins, determine whether it is safe to recycle the debris. If the presence of asbestos is suspected, a certified asbestos consultant or other qualified professional should make this determination. Recycling activities should take place only if there are no hazardous materials or if they can be safely separated from the remainder of the debris.



STEP 7: DEVELOP A PLAN TO HANDLE SPECIAL MATERIALS

Materials:

In maximizing recycling or other diversion activities during a building demolition, there are a number of materials that may

make recovering or recycling the waste more difficult and expensive and may increase disposal costs. These materials include:

- 1) asbestos,
- 2) treated wood, and
- 3) lead-based paint.

How to handle:

Although there is no definitive answer to address these special wastes, the following is generally true:

- ◆ contamination must be removed,
- ◆ encapsulated, or
- ◆ commingling of the waste must be minimized to maximize reuse of the uncontaminated materials.

Some general guidelines for addressing these wastes follow:

1. Asbestos

List: Following is a list of some materials made from asbestos that would likely be found in residential and commercial structures.

- ◆ acoustic ceilings;
- ◆ furnace duct and furnace insulation;
- ◆ drywall taping and joint compound;
- ◆ textured paints and plaster;
- ◆ vinyl flooring (linoleum or vinyl tiles);
- ◆ pipe lagging and block insulation;
- ◆ paper tape on HVAC systems;
- ◆ asbestos-cement wallboard;
- ◆ asphalt roofing material and roofing felt;
- ◆ silver roof emulsion;
- ◆ spray applied fire-proofing; and
- ◆ fire door insulation.

Health concern: Asbestos is a health concern when it is exposed, disturbed, and friable.

Friable materials include:

- ◆ sprayed on acoustic ceilings,
- ◆ paper insulation on furnace ducting, and
- ◆ pipe insulation that is of the soft, crumbly type.

Non-friable materials include:

- ◆ floor tile, and
- ◆ hard cement-like pipes and panels.

Disposal: Disposal of asbestos-containing material is primarily the concern of the licensed contractor who should be aware of the licensing, remediation, encapsulation, transportation, and disposal requirements.

Asbestos defined: The California Environmental Protection Agency defines asbestos waste (which means it is hazardous) as having more than 1% asbestos and being friable.

- ◆ If the waste does not meet both these criteria, it can be disposed of as normal waste in a Class III landfill.
- ◆ If it is friable and contains more than 1% asbestos, it must be disposed of in a landfill site approved for hazardous waste, or the friable asbestos must be contained or encapsulated when removed.
- ◆ Several Class III landfills are permitted to accept encapsulated asbestos. For information regarding locations to dispose of asbestos waste contact:

Department of Toxic Substances Control
700 Heinz Avenue, Building F
Berkeley, CA 94710
(510) 540-3739

- ◆ For buildings which may contain asbestos, it is recommended that contractors conduct air monitoring to assure safety of workers on site.

Contractor: Any contractor removing more than 100 square feet of asbestos must be registered with Cal/OSHA and licensed by the Contractors State License Board. For

information regarding registration of a contractor or a list of licensed contractors, refer to these agencies:

Cal/OSHA
455 Golden Gate Avenue
5th floor, Room 5227
San Francisco, CA 94102
(415) 703-5501

California Contractors State License Board
P.O. Box 2600
Sacramento, CA 95826
(916) 366-5153
(800) 321-2752

2. Treated Wood

Table: The table below depicts the materials considered to be treated wood and the reuse applications for these materials.

Materials	Treated wood includes: <ul style="list-style-type: none">• utility poles,• railroad ties, and• other construction wood treated with chemicals and preservatives to prevent wood rot.
Reuse applications	<ul style="list-style-type: none">• light poles,• landscaping timber,• parking barriers,• retaining walls, and• construction of fences or open air pole barns.

Environmental concerns: Although reuse is encouraged over landfilling, environmental concerns arise when water quality issues are at stake as would be the case when surface water or ground water could be threatened from the chemicals leaching from the wood.

Limitations on disposal: There are also limitations on the disposal of treated wood. The type and amount of preservative used to treat the wood may cause it to be classified and regulated as hazardous waste.

If the chemicals in the treated wood are listed as a RCRA waste **and** exceed RCRA limitation, the treated lumber will have to be disposed of in a Class I landfill if it is not reused for its intended purpose.

Treated wood that is not listed as a RCRA waste and is intended for disposal **may** be permitted for disposal at a Class II or Class III landfill, if the following conditions are met:

- ◆ the landfill is lined;
- ◆ is willing to accept the waste; and
- ◆ is permitted to accept the waste by the Regional Water Quality Control Board.

DTSC: If disposal is the only option left, a determination will need to be made on whether the treated wood is classified as hazardous. For guidelines on making this determination, contact the Waste Evaluation Unit of the Department of Toxic Substances Control (DTSC) at (916) 322-7676.

3. Lead-based paint

Structures: When paint contains lead, the potential of having to deal with hazardous materials becomes an issue.

Structures built before 1960 are **likely** to be coated with lead-based paint. Those built before 1978 have a **potential** to be coated with lead-based paint.

Note that paints produced before 1960 contain higher concentrations of lead than lead-based paints produced in later years.

DTSC position: If it has been determined that the paint contains lead, refer to the Department of Toxic Substances Control's position as issued in a June 13, 1994, Regulation Guidance entitled *Lead Painted Building Debris*. (See Attachment F).

Three options: There are essentially three options available for reuse of lumber that is coated with lead-based paint.

OPTION	REMEDICATION	LIMITATION
1 remove the paint	This will leave the wood clean, but also leaves a problem of disposing of the now potentially hazardous residue	This option is usually only cost-effective for high value wood such as large dimension lumber or unique timbers or fixtures.
2 encapsulate the lead paint by painting over it	This is considered an adequate remediation technique which eliminates the exposure pathway of the lead and allows use of the structure.	However, if defabrication or demolition is planned in the future, the lead-based paint will be exposed again.
3 reverse the exposed side of the painted surface to expose the unpainted portion of the lumber	This eliminates the pathway for human contact,	but would lead to re-exposure under demolition of the structure.

Re-evaluate: Be aware that any paint removed from the structure has to be evaluated separately to determine if it is a hazardous material, and care must be taken not to contaminate surrounding soil or water.

Biomass or mulch: If wood waste is going to be processed for mulch or biomass fuel, lead-based painted material is unacceptable, and painted wood in general is highly undesirable.

If disposal is the only remaining option, use the DTSC guidelines listed above and refer to the DTSC helpline to assist you in determining which disposal option to take.

☐ **STEP 8: DEMOLISH THE BUILDING**

C21 contractor: Building demolition should only be accomplished by a licensed C-21 or other qualified contractor. A qualified contractor should be familiar with, and must comply with all appropriate health and safety regulations for the protection of workers on the site and the surrounding community.

Air quality rules: Local air quality management district (AQMD) regulations may require that all demolition work include fogging of debris with water to reduce dust during active demolition and transportation. It may be required that clean-up crews minimize run-off of water and prevent debris or ash from being washed into storm drains, because these flow, untreated, directly to the public beaches and ocean.

Check with the local AQMD to determine the requirements for demolition work.

☐ **STEP 9: REMOVE, TRANSPORT, AND DISPOSE OF REMAINING DEBRIS**

Wet debris: During removal, debris must be adequately wet to prevent dust at all times.

Enclose trucks: Transport trucks must be covered or enclosed. It is recommended that transport trucks be lined with 6 mil plastic to help retain moisture, which will reduce the generation of dust. Debris should be wrapped with plastic with the edges of the plastic folded inward to seal the contents. This method is sometimes referred to as a "burrito" wrap.

Call landfill: Before transporting waste to landfill, call the landfill and ask if there are special requirements for debris from earthquake-damaged buildings. The purpose of such requirements is to ensure that the debris does not contain hazardous materials.

Provide contractors conducting demolitions under the jurisdiction-managed program with a list of recycling and disposal sites to which debris is to be transported.

☐ **5: PHASE 4: POST-DEMOLITION**

Tasks: When the sites have been cleaned in accordance with the specification criteria established by the City, some post-demolition activity will be performed, including:

	POST-DEMOLITION PHASE
1	Issue reports as required by City.
2	Inspect property and accept reports.
3	Videotape and photograph the completed site and area, by lot.
4	Maintain contract records.
5	Complete processing of claims for funding and project close out.
6	Participate on as as-required basis in the negotiations of settlement of claims.

☐ **6: DIVERTING DEMOLITION DEBRIS**

Introduction: Following are some ideas on how to divert demolition debris based on building demolition programs established by the City of Los Angeles and the County of Humboldt after the 1994 Northridge earthquake and the 1992 Humboldt earthquake respectively.

City of Los Angeles Demolition Program³

Diversion steps: The City of Los Angeles took the following actions to encourage recycling of demolition debris.

Maximize recycling

Bidders for earthquake demolition contracts were instructed that the City desired to maximize recycling of demolition debris, and asked for estimates of the potential to source separate and recycle material at the demolition site for all buildings deemed "recyclable" by the City.

Deliver to mixed waste facility

Bidders were also notified that they would be required to take debris which had not been source separated to a mixed debris recycling facility designated by the City and that they should include in their bid price the cost of delivery to such facilities.

View building

Potential bidders viewed the building at a pre-bid meeting conducted at the site of the building. They were also notified as to whether the City had deemed the building "recyclable" or whether the building was determined to contain hazardous material, which required disposal at another, more appropriate, facility.

Low bid

The winning bidder was selected based on lowest bid.

Reporting

The contract language required reporting of recycling activity through source separation and reporting of the destination of remaining debris so that the City could monitor and track the recycling rate at the mixed debris recycling facility.

Monitoring

Monitoring and evaluation of the demolition and recycling process was ongoing, both to improve efficiency of the program and to gather information for FEMA reporting and calculation of the recycling rates.

Source reduction recycling rate

After a review of the initial contractor reports, the City added a minimum source separation recycling rate to the demolition contract language, based on the documented experience of City demolition contractors. (All contract language contains recycling requirements where applicable).

Business license or demolition permit

Although this was not part of the City's demolition program, consider incorporating the requirement that a contractor submit a waste management plan (detailing recycling and reuse activities) for the demolition project at the time the permit is applied for.

Humboldt County Demolition Program⁴

General conclusions:

Following are general conclusions from the *Earthquake Building Material Salvage Report* prepared by Humboldt County Environmental Health after the 4/25/92 earthquake in Humboldt County (see Attachment G).

- ◆ Develop and adopt an ordinance requiring salvage evaluation as part of the demolition procedure.
- ◆ Include requirements to establish facilities for salvage and reuse in conjunction with disposal facility permits.
- ◆ Enact rate structure modifications to encourage separation and salvage.
- ◆ Assuming pending development of sufficient infrastructure (processing facilities and markets), enact a medium-term ban on the landfilling of reusable, salvageable materials for which such facilities and markets have been established.

Project conclusions:

- ◆ It is more efficient to use hand crews to dismantle structures than to employ heavy equipment to tear the buildings into pieces capable of being trucked off-site for hand dismantling.
- ◆ On-site supervision is required. Supervision keeps wasted time to a minimum and results in the maximum amount of valuable materials saved.
- ◆ Need trained crews; this is more cost-efficient.
- ◆ Incorporating salvage into normal operating procedures for demolition is the most effective

method of ensuring the salvage of materials during emergencies and disasters.

Hand salvaging:

Hand salvaging can be an efficient method to dismantle structures rather than using heavy equipment to demolish them. Architectural fixtures, windows, doors, casings, banisters, and reusable lumber can be salvaged and either donated or sold to local businesses or organizations.

Save money:

Because disposal costs represent a large part of operating costs for demolition activities, diversion and recycling measures can represent significant savings in program costs. The time and labor involved in hand salvaging may be greater than when completely demolishing a structure, but costs can be saved through recycling and avoided disposal costs, in addition to the value of the salvaged materials.

HINTS AND POLICY ACTIONS⁵

Helpful hints:

The Office of Emergency Services prepared the *Survival Manual* noted above, which contains some helpful hints about managing a building demolition program after an earthquake. Following are some guidelines to keep in mind when setting up your building demolition program.

days to declare imminent hazard

Each jurisdiction needs to define the maximum number of days it will have after an event to declare a structure an imminent hazard to public health and safety and, correspondingly, demolish or shore it.

3-5 days

The most common time frame used is three to five days, but some jurisdictions use as many as ten days. After ten days, it becomes very difficult to justify that a structure poses an imminent threat; a building may represent a threat to public health and safety, but that threat is obviously not imminent. If the hazard is not imminent, the jurisdiction must go through normal condemnation hearings.

However, if there are aftershocks, a building's condition may worsen, long after the initial quake, making it an immediate, imminent hazard.

After Presidential declaration

In the case of a Presidential declaration, the following applies:

IF	THEN
After the initial time frame established by the local jurisdiction, but less than 30 days after the event	the jurisdiction can proceed with a condemnation hearing, BUT the local officials must notify FEMA that they intend to hold such a hearing.
If within 30 days the jurisdiction and the building owner agree to demolish the building	a request accompanied by substantiating data must be submitted to FEMA.
after 30 days	such demolition requests must be submitted to FEMA and will go through an established review process before permission is granted to reimburse for demolition.

Policy Actions

Suggested actions:

Following are some suggestions of policy actions a jurisdiction can take when developing its building demolition program.

- ◆ Adopt the current edition of the *Uniform Code for the Abatement of Dangerous Buildings* as published by the International Conference of Building Officials (ICBO).
- ◆ Develop an ordinance which provides procedures for the expedient abatement of building hazards which pose either an imminent or long-term threat to public health and safety.
- ◆ Set a policy concerning a building owner who chooses not to repair his/her building, and lets the building stand vacant and damaged.

- ◆ Check with the local Air Quality District to determine what regulations might apply to any demolitions. Specifically, will a building need to be sprayed continuously with water as it is demolished?
- ◆ If you demolish any housing units, have mechanisms to keep track of the tenants.
- ◆ Set up a system to document and keep records on the disposition of imminent hazard buildings.
- ◆ Have policies and programs that could assist building owners in finding financing for repair work, particularly on larger commercial/multi-family residential buildings.
- ◆ If demolition proves necessary, establish procedures to assist the building owner with the process. If the building owner has insurance, the insurance should pay for the cost of demolition.
- ◆ If emergency shoring, bracing, and other work to stabilize imminent hazard buildings is not completed within six months, your jurisdiction might not be reimbursed for its costs.
- ◆ FEMA defines the emergency condition as six months, with the possibility of extending to one year. Although the work might continue in that one year period, it will be difficult to justify paying emergency prices six months after the event.

ATTACHMENTS

- A. Building demolition flow chart, City of Los Angeles.
- B. Federal Public Assistance Building Demolition Program guidelines.
- C. Sample demolition plan, City of Los Angeles' July, 1995, demolition contract.
- D. Sample waiver release form for property owners, City of Los Angeles.
- E. Asbestos guidance
- F. Regulation Guidance, Lead Painted Building Debris, DTSC, 6/13/94.
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2. *Debris Management Course, Reference Manual, Emergency Management Institute, FEMA.*
3. *City of Los Angeles Northridge Earthquake Response Effort, Issue No. 7, 9/15/95.*
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5. *Earthquake Recovery: A Survival Manual for Local Government, September, 1993, Governor's Office of Emergency Services, Earthquake Program, pg. 191.*

CHECKLIST

CHAPTER 9

BUILDING DEMOLITION PROGRAM

PLANNING PHASE

- ☐ **Step 1: Review Section 403 (Essential Services) of the Stafford Act.**
- ◆ Determine the types of building demolition work eligible for federal demolition funding.

PRE-DEMOLITION PHASE

- ☐ **Step 1: Prepare Demolition Plan**
- ◆ Establish Demolition Plan.
 - ◆ Establish demolition procedures.
 - ◆ Develop a safety plan for the project which meets all state and federal regulations.
 - ◆ Prepare demolition technical specifications.
- ☐ **Step 2: Identify Affected Properties**
- ◆ Prepare background maps for identification and for bidding and demolition purposes.
 - ◆ Develop listing of parcels: addresses, owners, owners' addresses, percentage of damage, and assessor's parcel number. Determine utility information of each parcel site.
- ☐ **Step 3: Conduct historic preservation review**
- ◆ Consult with joint preservation team (FEMA/OES) to identify and review property that is included in a local, state, or national register of historic properties, districts, or sites.
 - ◆ Conduct CEQA/NEPA review, if necessary.

☐ **Step 4: Prepare video documentation**

- ◆ Make ground level video film and still photographic records of affected parcels before and immediately after cleanup operations.
- ◆ Record condition of non-participating, adjacent properties, as seen from the road.

☐ **Step 5: Establish haul routes**

- ◆ Prepare the maps for haul routes for debris removal.
- ◆ For the removal of hazardous materials, prepare maps for haul routes
 - ◆ comply with the requirements of the California Highway Patrol listed in Sections 31300 to 31308 in the California Vehicle Code.

☐ **Step 6: Obtain Waivers and Releases**

- ◆ Obtain all necessary right of entry, waiver release, and other required forms from property owner(s), if necessary.
- ◆ Obtain and pay for all necessary permits to perform the work.

☐ **Step 7: Prepare contracts**

- ◆ Prepare demolition contracts to perform the cleanup work.
- ◆ Each contract will include, but not be limited to, the following activities:
 - ◆ demolition;
 - ◆ recyclable material separation and removal, where applicable;
 - ◆ demolition debris not directly recycled from the site must be hauled to the recycling facility;
 - ◆ non-compliance penalty fee per load for any documented mixed debris not delivered to recycling center;
 - ◆ traffic control;
 - ◆ recycle demolition materials to the greatest extent possible ;

Building Demolition Checklist

- ◆ debris removal, haulage, and disposal at dump site ;
- ◆ dust control;
- ◆ daily site maintenance of any property on public way including streets, alleys, sidewalks, etc.;
- ◆ raking clean all dirt surfaces;
- ◆ sweeping all improved surfaces; and
- ◆ fencing off demolition area for safety purposes.

☐ **Step 8: Select contractor(s)**

- ◆ Provide information to firms on bid requirements.
- ◆ Develop list of bidders from interested and properly licensed contractors responding to notification.
- ◆ Prepare bid package specifications and cost estimates.
- ◆ Conduct bid solicitation.
- ◆ Attend public bid opening, log all bids, notify the lowest responsible bidder by FAX of the outcome.
- ◆ Select contractors through competitive bidding in accordance with City emergency contract procedures.

DEMOLITION PHASE

☐ **Step 1: Identify Hazardous materials in damaged buildings**

- ◆ Identify and remove hazardous waste.

☐ **Step 2: Obtain proper permits**

- ◆ Obtain all permits necessary for demolition, cleanup, utility line capping, hauling away, and other related tasks.
- ◆ Obtain and pay for all necessary permits to perform the work.

☐ **Step 3: Deploy field staff**

- ◆ Organize and deploy field staff.
- ◆ Cap sewer. Verify that water, gas and electricity services have been disconnected prior to commencing demolition.
- ◆ Provide and install a permanent 8' chain link fence along the perimeter of each property.
- ◆ Provide and install traffic control signs, barricades, canopies and flagmen.
- ◆ Obtain and pay for a temporary water meter from Department of Water and Power and pay for water usage for dust control.

☐ **Step 4: Notify residents and utilities of demolition schedule**

- ◆ Notify residents of demolition schedule, and post Advance Construction notice Sign two days before commencing work.
- ◆ Notify Dept. of Public Works inspector two days before commencing work.
- ◆ Underground Service Alert (USA). Prior to demolition, Contractor shall call to obtain a USA Inquiry Number.

☐ **Step 5: Remove hazardous materials and dispose of properly.**

- ◆ Small amounts of HHW (not greater than 5 gallons or 50 pounds) may be transported by homeowners for disposal at HHW roundup or similar event.
- ◆ Hazardous wastes exceeding 5 gallons or 50 pounds must be transported by properly licensed hazardous waste hauler.

☐ **Step 6: Recycle demolition debris.**

- ◆ Make recycling an integral part of demolition process.
- ◆ Contact solid waste recycling manager to coordinate recycling the debris from building demolition work.
- ◆ Determine whether it is safe to recycle the debris.

☐ **Step 7: Develop a plan to handle special wastes.**

Building Demolition Checklist

- ◆ Some materials may make recovering or recycling the waste more difficult and expensive:
 - ◆ asbestos,
 - ◆ treated wood, and
 - ◆ lead-based paint.
- ◆ General ways to handle these wastes:
 - ◆ contamination must be removed,
 - ◆ encapsulated, or
 - ◆ commingling of the waste must be minimized to maximize reuse of the uncontaminated materials.

☐ **Step 8: Demolish building.**

- ◆ Only licensed C-21 or other qualified contractor should undertake building demolition.
- ◆ Check with local air quality management district to determine requirements for demolition work.

☐ **Step 9: Remove, transport, recycle/dispose of remaining debris.**

- ◆ Wet debris to prevent dust during removal.
- ◆ Cover or enclose transport trucks.
- ◆ Call landfill before transporting waste to ask if there are special requirements for disaster debris.

POST-DEMOLITION PHASE

☐ **Closing Project**

- ◆ Issue reports as required by City.
- ◆ Inspect properties.
- ◆ Videotape and photograph the completed site and area, by lot.
- ◆ Maintain contract records.
- ◆ Complete processing of claims for funding and project close out.
- ◆ Participate on as as-required basis in the negotiations of settlement of claims.

CHAPTER 10

HOUSEHOLD HAZARDOUS WASTE AND DISASTER PLANNING

1: INTRODUCTION

Purpose: The purpose of this chapter is to provide assistance to local jurisdictions in developing a disaster plan for the collection of household hazardous wastes (HHW).

Need to modify: While many local jurisdictions already have comprehensive collection programs for HHW, these programs may need to be modified to allow the program to operate adequately during a disaster. A good disaster plan can help meet these needs.

Establish a program: For those jurisdictions that do not have a comprehensive collection program, Section 5 below provides information on how to establish a HHW collection program prior to a disaster.

If disaster strikes: If a disaster occurs prior to establishing a comprehensive household hazardous waste collection program and/or a disaster plan, local jurisdictions should follow Section 4 below on "Contents For a HHW Collection Program Disaster Plan."

Focus is HHW: While some of the information contained in this chapter may apply to hazardous materials emergency response, the focus of this chapter is on household hazardous waste collection programs.

Jurisdictions should contact local emergency agencies, the Governor's Office of Emergency Services (OES), and the Department of Toxic Substances Control (DTSC) for more specific information on hazardous materials emergency response.

Chapter contents: This chapter contains five sections.

SECTION	TOPIC	PAGE
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1	Introduction	10-1
2	Background on HHW	10-2
3	Purpose of disaster planning for HHW	10-3
4	Contents for a HHW collection program disaster plan	10-4
5	Establishing a HHW collection program	10-11

2: BACKGROUND ON HOUSEHOLD HAZARDOUS WASTE

What is HHW? Common household products that contain hazardous materials become HHW when discarded. Typical HHW include paint, used oil, batteries, and pesticides.

In California, HHW is not exempt from most hazardous waste laws, and it is illegal to dispose of HHW in solid waste landfills, down storm drains, and into municipal sewer systems.

While HHW must be managed as a hazardous waste, some wastes such as latex paint, batteries, and used oil are recyclable, and local jurisdictions are encouraged to recycle whenever possible.

3: PURPOSE OF DISASTER PLANNING FOR HOUSEHOLD HAZARDOUS WASTE

Minimize impacts: The purpose of disaster planning for HHW is to minimize potential public health and safety impacts, as well as to minimize costs and confusion.

Not prepared: In past disasters, local jurisdictions across the country were not adequately prepared for managing the HHW generated by disasters. While many local jurisdictions in California have already established HHW collection programs, these programs may need to be modified and expanded to accommodate the effects of a disaster.

Need for options: For example, existing transportation routes may not be accessible to a permanent collection facility, so other options such as roving services may need to be provided. In addition, wastes that have been collected from past floods have been uncontainerized, mixed, unknowns, and wetted creating a more complex and dangerous situation.

Coordinate plan: For cities that participate in a county collection program, a disaster plan should be developed in conjunction with the county. In addition, a disaster plan should be developed in consultation with the following:

- ◆ local/regional emergency management agencies,
- ◆ fire departments,
- ◆ police, and
- ◆ other local entities that may be involved in disaster and/or HHW collection programs.

4: CONTENTS FOR A HOUSEHOLD HAZARDOUS WASTE COLLECTION PROGRAM DISASTER PLAN

Plan contents: The following information should be included in a local disaster plan for HHW collection. This information may need to be modified or expanded to meet the individual needs for each local jurisdiction, as well as the disaster incident.

Description of existing HHW collection program: The disaster plan should include information about the jurisdiction's existing HHW collection program, including the contact person(s) and existing HHW collection permits. The plan should provide detailed information about the following:

- ◆ type of collection program,
- ◆ responsible agency,
- ◆ location of facilities,
- ◆ hours of operation,
- ◆ contact person,
- ◆ telephone number,
- ◆ storage capacity,
- ◆ types of wastes accepted, and
- ◆ any other relevant information.

Designate HHW coordinator: The designation of a HHW coordinator should be made and incorporated into the local incident command system (ICS).

Coordinators should receive training on local and state emergency response planning, disaster funding procedures, documentation, and any other areas related to the coordinator's duty checklist.

The coordinator should also be familiar with the Standardized Emergency Management

System (SEMS), and insure that local/regional emergency response personnel are familiar with and have adopted the plan.

More than one staff person should be trained as a HHW coordinator, as staff may not be available at the time of a disaster. In addition, the responsibilities for the disaster may be more than one coordinator can handle.

Develop lists: The following lists should be developed for use during a disaster for HHW collection:

- ◆ A Local Emergency Personnel Contact List of those staff that would be involved in HHW collection programs in the event of a disaster.
- ◆ Include names, telephone numbers, fax numbers, pager numbers, and roles and responsibilities.
- ◆ Information on the local incident commander should be included.
- ◆ Identification of "who approves what" for expenditures and activities need to be included.
- ◆ Also, identify those responsible for any necessary local permits.
- ◆ Duty Checklists should be developed for those local staff that will have a primary role in HHW collection programs. Include chain-of-command reporting procedures.
- ◆ A State Emergency Contact List should be developed which includes:
 - ◆ the local OES area coordinator,
 - ◆ the Department of Toxic Substances Control,
 - ◆ and the CIWMB disaster coordinator.

Some of these emergency numbers may not be available until the time of the disaster.

While federal agencies may be involved during a disaster, the initial contact for

assistance needs to follow SEMS. After contacting your local OES emergency coordinator, a contact number may at that time be provided for federal agencies such as FEMA or EPA.

Checklists: According to staff of the County of Sonoma, California, checklists were a very useful tool during the County's past flooding disasters. Checklists are recommended because they provided:

- ◆ a quick assignment of duties,
- ◆ quick reference, and
- ◆ back-up documentation if necessary.

For more information, see Attachment A, a checklist developed by Sonoma County.

Mutual aid agreements It may be useful to develop mutual aid agreements with other jurisdictions for collection of HHW during a disaster as well as providing public information. Please refer to Chapter 7 of this Plan for more information on mutual aid.

Identification of collection sites and equipment During past disasters, sites were in high demand for emergency temporary collection sites for HHW, as well as for other emergency needs. Due to the high demand for emergency sites, it is recommended that the local HHW coordinator work closely with local emergency response personnel in developing a plan for temporary sites to meet all needs.

Identification of both publically and privately-owned equipment that can be used for disasters and HHW is also important. Examples of needed equipment include trucks and forklifts.

More information: Refer to Chapter 4 on Temporary Storage Sites for more information.

Contractors/haulers: While many jurisdictions already have HHW contractor/hauler agreements in place, these agreements should address the additional needs for services due to a disaster.

Back-up contractor/hauler agreements may also need to be in place, since contractors may be overwhelmed with work during a disaster. In addition, State and federal agencies may have contractors available through their programs.

More information: Refer to Chapter 5 on Contracts for more information.

Timing of HHW While it is important to have special collection opportunities **collection events:** for disaster-related HHW as soon as possible to avoid illegal disposal, having an event or service too soon after a disaster may result in low participation.

The appropriate time for a special collection event/service will differ, but sufficient public notification, assessment and monitoring of the disaster and cleanup efforts are important factors.

Public Information/ notification: Local jurisdictions should be prepared to provide the public with information related to the problems associated with HHW along with information about special collection events and services.

It may be helpful to establish a telephone hotline, or modify an existing hotline, for the public to call for information. If a hotline is not established, or telephone service is disrupted due to a disaster, alternative methods for notification will need to be established to distribute information to the public.

Examples of alternatives would be door-to-door notification in affected areas, roadside signs, and flyers posted in public areas.

In keeping with Office of Emergency Services standard operating procedures, follow the OES chain of command for information distribution.

Load checking programs: After past disasters, some residents left piles of solid and hazardous waste at their curb for pickup. As such, significant amounts of HHW were collected through load checking programs at landfills and at transfer stations.

It is recommended that load checking programs be established, and that loads be checked and hazardous wastes be pulled out. A contractor could sort, identify, package, and ship the wastes.

State HHW collection permits: The State Department of Toxic Substances Control (DTSC) is responsible for issuing necessary state permits for HHW collection facilities. During a disaster, emergency permits can be issued for special collections that would not normally be allowed, e.g. curbside collection of nonrecyclables. For more information on permits, contact the Department of Toxics Substances Control at (510) 540-3894.

State and federal assistance and funds

State OES: The OES is responsible for requesting assistance on behalf of local jurisdictions for resources beyond the capability of the jurisdiction.

State assistance may include assistance available from State, federal, or private sources. If a local jurisdiction is declared a state disaster area, and the local jurisdiction deems that the needs of the disaster response are beyond its capabilities, then the local jurisdiction can request assistance and reimbursement of costs from OES.

Follow SEMS: All requests and emergency responses must be in accordance with the Standardized Emergency Management System. For

information on SEMS, please refer to Chapter 13. The State Department of Toxic Substances Control may have funding available for hazardous waste response and collection.

Federal assistance: If a state disaster area is declared a federal disaster, then federal funding assistance may be available through the State OES. Funding and assistance may be available from Federal agencies such as FEMA and the U.S. EPA.

Damage estimates: The local jurisdiction should provide to the State OES estimates of damages and a "scope of work requested." It is recommended that the local incident commander and/or the HHW coordinator meet ahead of time with local emergency agencies or State OES contacts regarding the proper procedures and wording of requests for assistance.

Funding Process: The funding process may vary depending on the unique circumstances of the disaster. The process can either be the traditional FEMA reimbursement process, or by direct assistance from EPA. For the floods of 1996 and 1997, FEMA, through EPA, provided a HHW contractor for emergency collection programs.

For more info: Please refer to Chapter 6 for more funding information, and contact your State OES area coordinator for more specific information. Refer to EPA's fact sheet, Attachment C.

Documentation of costs and quantities: It is highly recommended that all costs of collection programs for a disaster be documented. It is important to account for all the costs and services of HHW collection programs provided due to a disaster, as opposed to the existing program.

It is also important to document the quantities and types of waste collected to demonstrate that the wastes were generated above and beyond existing

collection programs.

In addition, it is recommended that local staff contact the State OES area coordinator for assistance (ideally prior to a disaster) for guidance on documentation and audits.

5: ESTABLISHING A HOUSEHOLD HAZARDOUS WASTE COLLECTION PROGRAM

New program: If a local jurisdiction does not have an existing or comprehensive HHW collection program, and does not participate in a county program, then it is highly advised that a program be established as soon as possible. The following information can be used to help establish a HHW collection program.

Initial steps: Following are six steps to follow in establishing a HHW Collection Program.

Initial Steps in Establishing a HHW Collection Program	
STEP	ACTION
Step 1	Define Roles and Responsibilities. Although one person can be the main organizer, the success of the program depends on the involvement of a variety of individuals and organizations. Those individuals that will have an on-going role in the program should be aware of their responsibilities.
Step 2	Establish a Planning Committee. A core group of people with the expertise needed to plan the HHW collection program should be established. Committee members should represent the local solid or hazardous waste planning program, local health program, city or

Initial Steps in Establishing a HHW Collection Program	
STEP	ACTION
	county planning commissions, citizen groups, and emergency management. Planning for the first collection program should begin early, at least 6-18 months in advance of collection program date.
Step 3	Establish Goals Identify the goals of the HHW collection program. While the overall goal is to keep HHW out of landfills, sewers, etc., more specific goals should be adopted to meet the needs of the community. These specific goals may be to provide the most convenient service, to include multi-family housing, or to maximize reuse and recycling. Establishing specific goals will help the planning committee and local officials determine the type of program to establish. It is also recommended that evaluation methods and the criteria to be used to measure the effectiveness of the program be developed.
Step 4	Determine Funding Availability. Potential funding sources can be general funds, tipping fees, parcel fees, and grants
Step 5	Decide Who the Program Participants Will Be. Will the program be available to residents only? Will CESQGs be allowed to bring in their wastes? (CESQGs are conditionally exempt small quantity generators as defined in Section 261.5 of Title 40 of the Code of Federal Regulations).
Step 6	Gather Information. It is essential that the sponsor and the planning committee learn about federal, state, and local laws and regulations that apply to their program. It is also important to anticipate the types and quantities of wastes that may be collected through the programs. In addition, gather information about other jurisdictions' HHW collection programs.

Public involvement: The public should be made aware of the development of the HHW collection program as early as possible, and the public should participate in the development of the program. Bringing in the public as early as possible in the program development stage will help provide public acceptance and assistance. Residents involved in the early stages of program development will help assure a sense of "ownership" and help ensure a greater participation in the program.

Waste acceptance criteria: The types and sources of wastes need to be determined early in the process. Wastes such as explosives are usually excluded from HHW collection programs due to extreme dangers.

In addition, local HHW programs can accept wastes from conditionally exempt small quantity generators (CESQG) if they choose so. CESQGs are businesses that generate less than 100 kilograms of waste a month and meet other criteria.

Select Type of HHW Collection Program

Program types: Various types of collection programs are available, and the jurisdiction should evaluate their program goals to determine which type(s) of programs should be established. Costs, size of program, and targeted wastes should also be considered.

The following is a summary of some of the types of collection programs available.

- ◆ Temporary (Periodic) HHW Collection Facilities
- ◆ Mobile HHW Collection Facility Programs.
- ◆ Curbside HHW Collection Programs
- ◆ Door-to-Door HHW Collection Programs
- ◆ Recycle-Only HHW Collection Facility.
- ◆ Permanent HHW Collection Facility.

Temporary (Periodic) HHW Collection Facilities These facilities are generally available as "One or Two Day" collection events or "Roundups", and are held at various sites including parking lots, city maintenance yards, and at landfills.

Criteria in selecting a site should include safety, convenience, size of area, liability, and local support.

The following requirements apply to temporary HHW collection facilities:

- ◆ Facilities can only be operated for a period of two consecutive days in any month at the same location.
- ◆ Upon termination of operations, all equipment, materials, and wastes must be removed from the site within 144 hours (Health & Safety Code Section 25218.1).
- ◆ Facilities must be operated in accordance with California Code of Regulations, Title 22, Section 66270.60(d)(5).
- ◆ Facilities must terminate operations within two days of commencing each session (Health & Safety Code 25218.1(l)).
- ◆ Facilities operate under a permit by rule issued by the Department of Toxic Substances Control. Refer to California Code of Regulations, Title 22, Section 67450.4. Contact the Department of Toxic Substances Control for permitting procedures at (916) 255-3549.

Appointments: To alleviate congestion and waiting times for participants, an appointment-based collection event can be organized. At these events, participants have appointments at specific times and dates to bring in their HHW.

Mobile HHW Collection Facility Programs	These programs include mobile collection facilities that utilize portable structures for collection events. Mobile collection facilities are set up at different locations throughout the year, and provide a more convenient service to residents. The following conditions must be met for mobile facilities:
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- ◆ A mobile collection facility must be operated not more than four times in any one calendar year at the same location,
- ◆ The facility is operated not more than three consecutive weeks within a two-month period at the same location.
- ◆ Upon termination of operations, all equipment, materials, and waste are removed from the site within 144 hours.
- ◆ Contact the Department of Toxic Substances Control for permitting requirements at

(916) 255-3549.

Curbside HHW Collection Programs These programs provides curbside service for collection of specific recyclable household hazardous waste, which includes latex paint, used oil, and small batteries. Most programs collect used oil. These programs must be operated in accordance with Health and Safety Code Sections 25163 and 25218.1. Contact the Department of Toxic Substances Control for permitting requirements at (916) 255-3549.

Door-to-Door HHW Collection Programs These programs collect HHWs from individual residences. These programs are generally run on an appointment basis, and can provide services to those individuals that are housebound and others who cannot travel to a collection site. Contact the Department of Toxic Substances Control at (916) 255-3549 for permitting requirements.

Recycle-Only HHW Collection Facility These facilities accept only recyclable materials, and operate in accordance with Health and Safety Code Section 25218.8.

These programs are sometimes referred to as "BOPS" for batteries, oil, and paint collections. Antifreeze and used oil filters are also accepted at some recycle-only facilities.

If the facility is operated in accordance with Health and Safety Code Section 25218.8, then a hazardous waste facilities permit is not required. Contact the Department of Toxic Substances Control for more specific information at (916) 255-3549.

Permanent HHW Collection Facility These facilities are permanent or semipermanent structures at a fixed location which meets both of the following conditions:

- ◆ The facility is operated at the same location on a continuous, regular schedule.
- ◆ The hazardous waste stored at the facility is removed within one year after collection.

Contact the Department of Toxic Substances Control at (916) 255-3549 for more specific information about permits and other requirements.

In addition, the CIWMB has a guidance document available for establishing permanent facilities. Contact the CIWMB at (916) 255-2891 to obtain a copy of the guidance document.

Select a contractor/hauler: Most communities contract with a qualified hazardous waste firm that handles the HHW collected, and recycles or disposes of the waste.

Potential contractors should be interviewed, and references should be checked. Other jurisdictions should be contacted in regard to the performance of their contractors.

In addition, a contractor should be selected based on the needs and program types selected by the jurisdiction. Contractor roles can range from total operation of HHW collection programs to only hauling the wastes to a hazardous waste facility.

Develop a site operation plan: A site needs to be selected and a site design needs to be developed. The site design should show the placement of equipment and demonstrate how the program site will operate. Please refer to the Department of Toxic Substances Control's Inspection Checklist for detailed information.

Develop a health & safety plan: Well-trained personnel as well as a site safety plan are crucial to the success of a HHW collection program. Personnel training will depend on the type of HHW collection program and the job category of each employee.

A health and safety officer should be part of the HHW collection program staff and be on site during collection. Health and safety officers should be responsible for proper personal protection equipment (PPE) and proper safety training.

Refer to Cal/OSHA for specific training requirements. A site safety plan should be included which provides safety procedures to be followed at a particular site.

Develop an emergency response plan: An emergency response plan should be developed for every HHW collection program. This plan should accomplish the following:

- ◆ identify the responsible roles of site personnel (including designation of an emergency coordinator);
- ◆ describe response procedures for different types of emergencies; and
- ◆ identify emergency services to be called if necessary.
- ◆ Emergency telephone numbers should also be listed at the site, including fire and police (911), ambulances, and hospitals.
- ◆ Spill reporting numbers should be listed, including local emergency response and response contractors.
- ◆ In some cases, a spill should be reported to the State Office of Emergency Services at (800) 852-7550.
- ◆ Also, it may be helpful to list CHEMTREC's emergency number, (800) 424-9300 (CHEMTREC is chemical industry organization).
- ◆ CHEMTREC's non-emergency number is (800) 262-8200, and they can provide information on special handling precautions for chemicals. Please refer to Attachment B for a brochure from CHEMTREC for more information.

Establish segregation and sorting protocols: Procedures for segregating collected wastes that are incompatible should be developed. In addition, segregation and sorting protocols should be established for recyclable HHWs such as

batteries, oil, and latex paint.

Establish reuse/ recycling programs: California's waste management hierarchy places recycling/reuse above landfilling. As such, all efforts should be made by local jurisdictions to establish programs that not only collect recyclables but establish a use for those recyclables.

ATTACHMENTS

A.Sonoma County Checklist

B.CHEMTREC brochure

C.EPA's Role in the Federal Response Plan, Fact Sheet, 550-F-006, May 1995

REFERENCES

- ◆ California Integrated Waste Management Board, "Statutes Effective January, 1995."
- ◆ Daniel, Lesli, Presentation at the Household Hazardous Waste Management Conference. February, 1996.
- ◆ Lund, Herbert F., "Household Hazardous Wastes," The McGraw-Hill Recycling Handbook. 1993.
- ◆ United States Environmental Protection Agency, "Household Hazardous Waste Management: A Manual for One-Day Community Collection Programs." EPA530-R-92-026. Washington, D.C. August, 1993.
- ◆ Waste Watch Center, "Disaster!!", Household Hazardous Waste Management News. March, 1994.
- ◆ Meeting Minutes from the Northern California Household Hazardous Waste Information Exchange. September, 1995.

CHECKLIST

CHAPTER 10

HOUSEHOLD HAZARDOUS WASTE COLLECTION PROGRAM

CONTENTS FOR HOUSEHOLD HAZARDOUS WASTE (HHW) COLLECTION PROGRAM DISASTER PLAN

1. Describe Existing HHW Collection Program

- ◆ Describe the existing HHW programs, including all collection and public education programs, and existing permits.

2. Designate A Local HHW Disaster Coordinator

- ◆ A Coordinator should be designated prior to a disaster, and provided training on local and state emergency response planning and funding.

3. Develop Lists

- ◆ Lists should be developed including local emergency personnel, duty checklists for local government staff, and a state emergency contact list.

4. Enter into Mutual Aid Agreements

- ◆ Mutual aid agreements should be signed prior to a disaster to identify potential assistance from neighboring jurisdictions, including collection of HHW and public information.

5. Identify Potential Collection Sites and Equipment

- ◆ Local HHW Coordinator should work closely with emergency response personnel to identify sites for collection, as well as available publically and privately-owned equipment.

6. Prepare Contractor/Hauler Agreements

- ◆ While many local governments have existing agreements, these agreements may need to be modified to address the additional needs for service during a disaster.

7. Timing of Household Hazardous Waste Collection Events

- ◆ Assess the needs for special collection events due to a disaster, and how soon after the disaster the public will be ready for the event. Make sure sufficient public notices have been made.

8. Public Information/Notification

- ◆ Local governments should be prepared to provide the public with information related to emergency household hazardous waste and collection programs.

9. Establish or Expand Load Checking Programs

- ◆ Load checking programs may need to be established or expanded due to a disaster.

10. Apply for State Household Hazardous Waste Permits

- ◆ The State Department of Toxic Substances Control is responsible for issuing all household hazardous waste collection permits for the state.

11. Apply for State and Federal Assistance/Funds

- ◆ The Governor's Office of Emergency Services is responsible for requesting assistance for local governments for all disaster assistance and funding.

12. Document Costs, Quantities, and Types of Household Hazardous Waste Collected

- ◆ All costs incurred by local government due to disasters should be adequately documented, as well as the quantities and types of household hazardous waste collected.

**ESTABLISHING A HOUSEHOLD HAZARDOUS WASTE
COLLECTION PROGRAM**

◆ Initial Steps

1. Define Roles and Responsibilities.
2. Establish a Planning Committee .
3. Establish Goals.
4. Determine Funding Availability.
5. Decide Who the Program Participants Will Be.
6. Gather information about HHW laws and regulations, types and quantities of HHW that may be collected.

7. Gather information about other jurisdictions' HHW programs.

◆ **Public Involvement**

- ◆ Notify the public of the development of the program as early as possible, and provide a means for public input.

◆ **Establish Waste Acceptance Criteria**

- ◆ Determine what types of wastes will be accepted/excluded and whether wastes from conditionally exempt small quantity generators will be accepted.

◆ **Select Type of Collection Program**

- ◆ Temporary (Periodic) HHW Collection Facilities
- ◆ Mobile HHW Collection Facility
- ◆ Curbside HHW Collection Programs
- ◆ Door-to-Door HHW Collection Program
- ◆ Recycle-Only HHW Collection Facility
- ◆ Permanent HHW Collection Facility
- ◆ Combination of above

◆ **Select HHW Contractor/Hauler**

- ◆ Interview potential HHW contractors. Contact other jurisdictions to get information about their contractors/haulers.

◆

Develop A Site Operation Plan

- ◆ This should include site selections, design, and operation of collection sites.

◆ Develop A Health and Safety Plan

- ◆ This plan should establish procedures to avoid incidents such as spills and worker injuries.

◆ Develop An Emergency Response Plan

- ◆ This plan should address onsite spills and other emergencies occurring at collection sites.

◆ Establish Segregation and Sorting Protocols

- ◆ Establish segregation protocols for HHW and segregation and sorting protocols for recyclable HHW such as batteries, oil, and latex paint.

◆ Establish Reuse/Recycling Program

- ◆ Programs should be established to address the collection of recyclables and methods to reuse or recycle collected materials.

CHAPTER 11

PUBLIC INFORMATION PROGRAM

Background:

A diversion program can only be as good as its public information or outreach program. An effective public information program will realize two goals:

- ◆ provide adequate advertisement of the debris collection program; and
- ◆ educate the residents and contractors involved in carrying out the program.

Unless this program is taken seriously and resources applied to implement it, plans to recycle and otherwise divert the disaster debris may go unrealized.

STEPS TO TAKE

Suggested steps:

Based on the experiences of other local jurisdictions that have undertaken disaster recovery programs, following are some suggestions in establishing your public information/outreach program.



STEP 1:

Establish a public information or media center to handle debris management questions from the public.

- ◆ cleanup instructions,
- ◆ status of cleanup,
- ◆ respond to public inquiries,
- ◆ locations of dropoff or collection sites,
- ◆ how to source separate,
- ◆ enforce provisions against illegal dumping, and
- ◆ complaints re debris piles or illegal dumping via geographic information system (GIS).

Consider setting up a mobile information center.

Public Information Program

- ☐ **STEP 2:** Develop contact list for the media: television, radio, cable access, ham operators, newspapers, neighborhood newsletters.
- ☐ **STEP 3:** Set up a hotline for the public to call regarding debris management programs and/or for debris pickup.
- ☐ **STEP 4:** The Public Information Officer (PIO) will coordinate with the office or department implementing the debris management program to inform the public and contractors how to use the program and to provide updates.

Use all media--print (newspaper, doorhangers), TV (national, local, cable), radio, speakers. Also consider coordinating with the waste haulers to advertise the programs since they will be the ones in the field performing the actual collection. They may be able to deliver notices door-to-door. Also check with the California Conservation Corps and their ability perform these functions.

The PIO may be responsible for hosting the media and visitors at the disaster area.
- ☐ **STEP 5:** Advertise recycling/diversion programs for the disaster debris: point of collection, hours, materials to be collected, method of collection--drop-off, curbside, bins, etc.
- ☐ **STEP 6:** Identify all target groups, particularly those Non-English speaking groups, and the geographical areas where they reside.

State Office of Emergency Services (OES) can provide maps of the local area depicting where different languages are spoken and the approximate number of non-English speakers).

☐ **STEP 7:** Determine need for interpreters and translators based upon above.

☐ **STEP 8::** Provide fact sheets to the public in English and major non-English languages in the area. Fact sheets on solid waste will be one type that will likely be developed.

Examples include: how to handle household hazardous waste; what to do with disaster debris; guidelines for participating in debris collection programs, etc.

☐ **STEP 9:** Structure a public information campaign so that messages reach target groups at home, at work, and at leisure.

☐ **STEP 10:** Jurisdictions may wish to develop a Public Information Mutual Aid Plan such as the one adopted by San Luis Obispo, Santa Barbara, and Ventura Counties. Contact the nearest OES Regional Office for more information.

Example: Take into account that changes in policies and programs may well affect your diversion program. The City of Los Angeles used the Good Year Blimp in July, 1995 to advertise to City residents that the earthquake pickup program was over.

This was an innovative approach to getting the word out to the public except for the fact that FEMA subsequently extended the debris program for six months, and the City had to "undo" its creative advertising.

Regional cooperation:

Costs for advertising in the media can be prohibitive, yet using the media is the best way to notify as many residents as possible of the diversion programs and how to participate in them.

The City of Los Angeles was quoted a price of \$16,000 for a 1/4 page ad in the *Los Angeles Times* to advertise their earthquake pickup program. The City of Santa Clarita was

also implementing a curbside pickup program, and the *L.A. Times* was the primary paper their residents read.

As it was Santa Clarita residents followed the instructions in the *Times* for the City of Los Angeles programs, thinking that they applied to them. Had the two cities been able to combine their efforts and advertise together, not only would they have saved money, but there would have been less confusion about the two curbside programs.

CHAPTER 12

REBUILDING USING RECYCLED-CONTENT PRODUCTS

Background: After the disaster recovery is well underway, residents and businesses will begin rebuilding. Rebuilding includes two aspects that are important for disaster planning:

- ◆ selecting recycled-content products (RCPs) for building, and
- ◆ separating materials at the construction jobsite to maximize recovery.

Products: The key to diverting construction and demolition (C&D) debris is to promote products using the debris as feedstock. Recycled-content construction products will be discussed in two categories:

- ◆ inerts, and
- ◆ general building products.

Contents: This chapter contains five sections.

Section	Topic	Page
1	Inert Products	12-2
2	Building Products	12-3
3	Building Product Selection	12-5
4	Assistance to Manufacturers	12-6
5	Jobsite Separation	12-7

☐ **1: Inert products**

Largest category: The largest category of disaster debris is inerts, such as concrete, asphalt, and rubble. Most inerts can be processed into construction products. The following is a list of inert product categories.

Aggregate: The largest product category using recycled inerts is aggregate base under paved roads, made from crushed concrete and asphalt. Other common uses are gravel roads, base for building foundations, and fill for utility trenches. (See *Recycled Aggregate* fact sheet,,

Attachment A)

Asphalt: Broken asphalt pavement can also be crushed and used in new asphalt pavement, usually as 15%content. This practice is common in southern California. (See *Asphalt Pavement Recycling* fact sheet, Attachment B).

Inert product promotion: Most recycled inerts are used in road rehabilitation and other public works projects. Application methods of recycled inert products are often different from their virgin counterparts, so some education is required.

Actions: The following is a list of suggested actions to promote these products with public works personnel.

#	SUGGESTED ACTIONS
1	Meet with City/County engineers to: <ul style="list-style-type: none">• establish a dialog and learn the engineers' concerns with recycled products,• supply the fact sheets <i>Recycled Aggregate</i> and <i>Asphalt Pavement Recycling</i>. (see Attachments A and B).• review existing City/County specifications for road base and asphalt pavement,• provide copies of Caltrans' Standard Special Provisions (SSPs) for recycled aggregate base and subbase. (See <i>Recycled Aggregate</i> fact sheet for details to download from World Wide Web, or to order from CIWMB.)• provide a list of local suppliers of recycled aggregate and asphalt, such as <i>Recycled-Content Construction Products</i>. (See Attachment C).
2	Consider holding workshop so that recyclers can instruct City/County engineers in the use of their recycled products.

☐ 2: Building products

Examples: There are many types of recycled products used in buildings. Some examples are:

- ◆ glass-bonded floor tile,
- ◆ cellulose insulation,
- ◆ metal and fiber/cement roofing shingles,
- ◆ wall panels,
- ◆ polyester carpets,
- ◆ carpet cushion,
- ◆ latex paint, and
- ◆ plastic lumber.

Although many of these products do not use disaster debris as feedstock, it is still wise to encourage their use to help develop long-term recycling infrastructure.

Rebuilding with Recycled-Content Products

Actions: The following table presents a list of suggested sources of information on construction-related RCPs.

#	Suggested sources of information on construction-related RCPs
1	CIWMB's RCP database is on World Wide Web at [http://www.ciwmb.ca.gov]. (This database includes the Recycled Products Guide and the Harris Directory, but cannot be downloaded).
2	<i>Recycled-Content Construction Products</i> , a spreadsheet of 450 manufacturers of products available in California. (See Attachment C, or order updates from CIWMB's Hotline 1-800-553-2962, pub#431-96-018).
3	Recycled Products Guide (RPG), catalog of all types of RCPs, 5,000 listings including building products, has separate California section. \$295 for one-year subscription, 1-800-267-0707.
4	Harris Directory is a database of 1,800 building products, (505) 995-0337.
5	Clean Washington Center's <i>Directory of Recycled-Content Building and Construction Products</i> , (206) 464-7040.
6	CIWMB's list <i>C&D Recycling--Organizations/Publications</i> is a one-page spreadsheet that includes some local and national directories of construction-related RCPs. (Order from CIWMB's Hotline 1-800-553-2962, pub#431-96-019)

☐ **3: Building product selection**

Examples: There are many players in the construction industry, most of whom can select or veto products. Examples are owners, developers, architects, specifiers, contractors, and building officials. Products must be specified in the building contract. (A fact sheet on specifications and contract language should be available in early 1997).

Actions: The following is a list of suggested actions to encourage RCP selection.

#	A list of suggested actions to encourage RCP selection
1	Determine which products have been properly tested and meet industry standards, and obtain those product specifications from the manufacturer. (Promoting sub-standard products does not help the recycling industry. See guide <i>Construction Product Approval Process</i> , Attachment D.)
2	Make construction RCP lists available at local recycling hotlines.
3	Provide lists of RCPs and product specifications to owners, developers, architects, specifiers, contractors, and building officials. On some projects, 'owners' will be City or County governments.
4	Determine if City or County procurement guidelines inadvertently preclude RCPs in local government buildings
5	Consider having city council pass a motion requiring minimum procurement for certain RCPs in public buildings.

☐ **4: Assist manufacturers**

Type of assistance: Local manufacturers of construction RCPs may need assistance. If they are expanding or in start-up phase, they may need financing or assistance with permits. The following is a list of suggested actions to assist manufacturers.

#	A list of suggested actions to assist manufacturers
1	Refer manufacturers to your local Recycling Market Development Zone (RMDZ) Coordinator.
2	Refer manufacturers to CIWMB's R-Team at (916) 255-1000 for financial, technical, permitting, and marketing assistance.
3	Consider creating an RMDZ in your city if you haven't already done so.
4	Provide to new manufacturers the guide <i>Construction Product Approval Process</i> . (See Attachment D). Manufacturers of construction products must have their products tested in order to compete in the marketplace, and to follow building code safety requirements.

☐ **5: Jobsite separation**

Actions: Following is a list of suggested actions to encourage separation and recycling of construction waste at new construction sites.

#	Suggested actions to encourage separation and recycling of construction waste at new construction sites.
1	Make available to contractors: <ul style="list-style-type: none">• local list of C&D recyclers, or CIWMB's statewide list <i>C&D Recyclers -- Processors & Receivers</i> (Pub #431-96-017)• information on jobsite separation, such as <i>Job Site Source Separation</i> fact sheet (see Attachment E).• materials facts sheets, such as <i>Drywall Recycling</i> and <i>Urban Wood Waste</i>. (See Attachment F).• economics worksheet, to determine cost-effectiveness of each job.
2	Consider attaching to each new construction permit issued <ul style="list-style-type: none">• some of the documents in #1 above,• a requirement for the contractor to submit a waste management plan. The plan could include jobsite separation, and possibly some recycling.

ATTACHMENTS

- A. Recycled Aggregate fact sheet.
- B. Asphalt Pavement Recycling fact sheet.
- C. Recycled-content Construction Products fact sheet.
- D. Construction Product Approval Process fact sheet.
- E. Job Site Source Separation fact sheet.
- F. Drywall Recycling and Urban Wood Waste fact sheet.

CHECKLIST

CHAPTER 12

REBUILDING USING RECYCLED-CONTENT PRODUCTS

☐ Rebuilding phase

- ◆ Select recycled-content products for building.
- ◆ Separate materials at construction jobsite to maximize recovery.

☐ Promote products using disaster debris as feedstock

- ◆ inerts
- ◆ building products

☐ 1: Inert Products

- ◆ Meet with City/County engineers to:
 - ◆ establish a dialog and learn the engineers' concerns with recycled products;
 - ◆ supply the fact sheets *Recycled Aggregate* and *Asphalt Pavement Recycling*;
 - ◆ review existing city/county specifications for road base and asphalt pavement;
 - ◆ provide copies of Caltrans' Standard Special Provisions for recycled aggregate base and subbase;
 - ◆ provide a list of suppliers of recycled aggregate and asphalt, such as *Recycled-Content Construction Products* ; and
 - ◆ hold workshop to instruct city/county engineers in the use of recycled products.

☐ 2: Building Products

- ◆ Sources of information on construction-related recycled-content products:

- ◆ On-line Database - Recycled-Content Products - CIWMB's on-line database of recycled-content products of all kinds, including construction.
- ◆ *Recycled-Content Construction Products* - spreadsheet of 450 manufacturers of products available in California
- ◆ Recycled Products Guide (RPG) - catalog of all types of RCPs, 5,000 listings including building products, has separate California section.
- ◆ Harris Directory - database of 1,800 building products.
- ◆ Clean Washington Center's *Directory of Recycled-Content Building and Construction Products*.
- ◆ California Integrated Waste Management Board's list *C&D Recycling--Organizations/Publications* - one-page spreadsheet that includes some local and national directories of construction-related RCPs.

☐ 3: Building Product Selection

- ◆ Suggested actions to encourage RCP selection:
 - ◆ Determine which products have been properly tested and meet industry standards, and obtain those product specifications.
 - ◆ Make construction RCP lists available at local recycling hotlines.
 - ◆ Provide lists of RCPs and product specifications to owners, developers, architects, specifiers, contractors, and building officials.
 - ◆ Determine if City or County procurement guidelines inadvertently preclude RCPs in local government buildings.
 - ◆ Consider having city council pass a motion requiring minimum procurement for certain RCPs in public buildings.

☐ 4: Assist Manufacturers

- ◆ Suggested list of actions to assist manufacturers:
 - ◆ Refer manufacturers to your local Recycling Market Development Zone (RMDZ) Coordinator.
 - ◆ Refer manufacturers to CIWMB's R-Team at (916) 255-1000 for financial, technical, permitting, and marketing assistance.
 - ◆ Consider creating an RMDZ in your city if you have not already done so.

- ◆ Provide to new manufacturers the guide *Construction Product Approval Process*.

☐ 5: Jobsite Separation

- ◆ Suggested actions to encourage separation and recycling of construction waste at new construction sites. Make available to contractors:
 - ◆ local list of C&D recyclers, or CIWMB's statewide list *C&D Recyclers -- Processors & Receivers* (Pub #431-96-017);
 - ◆ information on jobsite separation, such as *Job Site Source Separation* fact sheet;
 - ◆ materials facts sheets, such as *Drywall Recycling* and *Urban Wood Waste*;
 - ◆ economics worksheet, to determine cost-effectiveness of each job.
 - ◆ Consider attaching to each new construction permit issued
 - ◆ some of the documents in #1 above; and
 - ◆ a requirement for the contractor to submit a waste management plan.

CHAPTER 13

STANDARDIZED EMERGENCY MANAGEMENT SYSTEM (SEMS)

Background: As a result of the 1991 East Bay Hills Fire, Senate Bill 1841 was passed by the Legislature and made effective 1/1/93. The law is found in Section 8607 of the California Government Code. The intent of this law is to improve the coordination of state and local emergency response in California. The SEMS regulations took effect in September of 1994.

Five levels: SEMS consists of five organizational levels which are activated as necessary:

- ◆ field response;
- ◆ local government;
- ◆ operational area;
- ◆ regional; and
- ◆ state.

Adapted from ICS: SEMS has five essential functions adapted from the Incident Command System (ICS). The field response uses the five primary ICS functions: command, operations, planning/intelligence, logistics, and finance/administration.

At the local government, operational area, regional, and state levels, the term "management" is used instead of command. The titles of the other functions remain the same at all levels.

- ◆ Management ;
- ◆ Operations;
- ◆ Planning/Intelligence ;
- ◆ Logistics;
- ◆ Finance/Administration.

SEMS deadlines By December 1, 1995, all local governments within a county geographic area shall be organized into a single operational area and the county board of supervisors shall be responsible for its establishment.

SEMS

SEMS compliance regulations must be developed on or before December 1, 1995.

State agencies are required to use SEMS.

Local Governments must use SEMS by December 1, 1996, in order to be eligible for state funding of their personnel related costs under state disaster assistance programs.

SEMS components The SEMS will integrate several of the state's emergency response components:

- ◆ The Incident Command System (ICS), the nationally used standardized emergency management system for field level response;
- ◆ Multi-agency or inter-agency coordination;
- ◆ Mutual aid;
- ◆ Operational Areas;
- ◆ A common EOC structure compatible with ICS (Management, Operations, Planning/Intelligence, Logistics, and Finance/Administration).

Put in emergency plans: The following items should be reflected in emergency plans and procedures to conform with the SEMS as described in Section 8607 of the Emergency Services Act.

- ◆ Review documents that provide the legal basis for emergency planning for their conformance to SEMS requirements, and modify as required.
- ◆ Include "official" recognition that the agency or jurisdiction has adopted SEMS. This could be in a letter of promulgation, a resolution, or ordinance.
- ◆

SEMS

Reference documentation indicating participation in, or establishment of, the Operational Area.

- ◆ Provide a description of tasks associated with each SEMS function (i.e., Management, Operations, Logistics, Plans/Intelligence, Finance/Administration).
- ◆ Include a basic SEMS organizational chart and description (in matrix format) of what agencies could perform each of the five SEMS functions.
- ◆ Describe the coordination links between your adjacent SEMS levels (field, local, operational area, region, and state).
- ◆ Provide a fundamental checklist for each of the five SEMS functions.

FIVE SEMS LEVELS

The five SEMS organizational/response levels are described briefly below. The levels are activated as needed for an emergency.

LEVEL	DESCRIPTION
Field response level	The field response level is where emergency response personnel and resources, under the command of an appropriate authority, carry out tactical decisions and activities in direct response to an incident or threat. SEMS regulations require the use of ICS at the field response level of an incident.
Local government level	<p>Local governments include cities, counties, and special districts. Local governments manage and coordinate the overall emergency response and recovery activities within their jurisdiction.</p> <p>Local governments are required to use SEMS when their emergency operations center is activated or a local emergency is declared or proclaimed in order to be eligible for state funding of response-related personnel costs.</p>
Operational Area	<p>Under SEMS, the operational area means an intermediate level of the state's emergency services organization which encompasses the county and all political subdivisions located within the county including special districts.</p> <p>The operational area manages and/or coordinates information, resources, and priorities among local governments within the operational area, and serves as the coordination and communication link between the local government and the regional level.</p> <p>While an operational area always encompasses the entire county area, it does not necessarily mean that the county government manages and coordinates the response and recovery activities within the county.</p> <p>The decision on organization and structure within the operational area is made by the governing bodies of the county and the political subdivisions within the county.</p>
Regional	Because of its size and geography, the state has been divided into three administrative and six mutual aid regions. The purpose of a mutual aid region is to provide for more effective application and coordination of

SEMS

LEVEL	DESCRIPTION
	mutual aid and other emergency related activities. In SEMS, the administrative regional level manages and coordinates information and resources among operational areas within the mutual aid region, and also between the operational areas and the state level. The regional level also coordinates overall state agency support for emergency response activities within the region.
State	The state level of SEMS manages state resources in response to the emergency needs of the other levels, and coordinates mutual aid among the mutual aid regions and between the regional level and state level. The state level also serves as the coordination and communication link between the state and the federal disaster response system.

INCIDENT COMMAND SYSTEM (ICS)

Purpose: ICS was originally developed by the fire services to provide a standard system for managing emergencies. ICS provides a common organizational framework within which agencies can work collectively at the scene of an emergency.

Functions: There are five primary functions within the ICS management structure. Each of these is important, and will have a role in any incident.

- ◆ Command;
- ◆ Operations;
- ◆ Planning/intelligence;
- ◆ Logistics; and
- ◆ Finance/Administration.

FUNCTIONS	DESCRIPTION
Command	<p>Command is the action taken to direct, order or control resources by virtue of some explicit legal, agency, or delegated authority.</p> <p>The on-scene command of an incident or an event is carried out by the Incident Commander who is commonly referred to as the IC.</p>
Operations	responsible for the coordinated tactical response directly applicable to, or in support of the mission(s) in accordance with the Incident Action Plan
Planning/ Intelligence	<p>In ICS, the function of Planning can also be called Planning/Intelligence.</p> <p>Responsible for the collection, evaluation, and documentation of information about the development of the incident and the status of resources.</p>
Logistics	responsible for providing facilities, services, personnel, equipment, and materials in support of the incident.
Finance/ Administration	responsible for all financial and cost analysis aspects of the incident, and for any administrative aspects not handled by the other functions.

REFERENCES

- ◆ Standardized Emergency Management System Guidelines, Office of Emergency Services, March 1995

CHAPTER 14

EMERGENCY AND DISASTER DECLARATION PROCESS

Background: The process to request state and/or federal assistance after a disaster or emergency is initiated when the local governing body or Governor submits a formal request to the appropriate state or federal office.

Assistance: Program and financial assistance will vary depending on:

- ◆ the type of declaration or proclamation declared,
- ◆ whether the situation constitutes an emergency or a disaster, and
- ◆ the assistance required.

Topics: This chapter has four sections:

Error! Bookmar k not defined.S ECTION	TOPIC	PAGE
1	Types of Declarations	14-2
2	Local Emergency Declaration	14-6
3	State of Emergency Proclamation	14-8
4	Presidential Declaration of a Major Disaster or Emergency	14-10

For more information: For more detailed information on the declaration process, consult these documents and contact the Office of Emergency Services, Disaster Assistance Branch, for assistance. OES will be able to advise you of any changes to the procedures or requirements.

Emergency and Disaster Declaration Process

☐ 1: TYPES OF DECLARATIONS¹

Background: The table below shows the declaration or proclamation necessary to activate state and federal assistance programs.

Type of Declaration	Who Declares	When	Assistance Available
Local Emergency Declaration (with OES Director's Concurrence)	<ul style="list-style-type: none"> City Council Board of Supervisors Person Authorized by ordinance 	Within 10 days of event but must be renewed every 14 days	State assistance under NDAA * for permanent restoration of public real property
OES Director's Concurrence of Local Emergency Declaration			<p>The Director's Concurrence <u>may</u> later be issued by the Director of OES, authorizing State disaster assistance for permanent restoration of public real property only, for declared local governments in accordance with NDAA.</p> <p>However, the Director does not always concur with a Local Emergency Declaration. Therefore NDAA is not always available with a local declaration.</p>
Governor's State of Emergency Proclamation	Governor		State assistance under NDAA for emergency response costs and permanent restoration assistance
Presidential Declaration of a Federal Major Disaster or Emergency	President	<p>Within 30 days of incident occurrence for Major Disaster Declaration</p> <p>Within 5 days of incident</p>	<p>State assistance under NDAA for matching fund assistance for cost sharing required under federal public assistance programs</p> <p>Federal assistance under Federal Response Plan</p>

Emergency and Disaster Declaration Process

Type of Declaration	Who Declares	When	Assistance Available
		occurrence for Emergency Declaration	

***NDAA** - Natural Disaster Assistance Act. Provides financial aid to local agencies to assist in the permanent restoration of real property, other than facilities used solely for recreational purposes, when such real property has been damaged or destroyed by a natural disaster.

Local responsibilities:

In the event of a disaster or local emergency, the primary responsibility for responding to, recovering from, and mitigating against the effects of disaster rests with local government.

State and/or federal assistance will be provided **only** when the effects of the emergency are beyond the capability of local resources to mitigate effectively.

Steps to take:

The following four steps are required when a local jurisdiction requests a Governor's Proclamation or a Presidential Declaration.

STEP	ACTION	PAGE
1	reconnaissance	14-4
2	development of situation reports	14-4
3	requesting mutual aid	14-5
4	determine type of state and/or federal assistance needed	14-5

Note that these steps above are not **required** for declaring a local emergency. A local jurisdiction can declare a local emergency whenever it needs the special powers authorized by its ordinances.



STEP 1: RECONNAISSANCE

During the reconnaissance stage, local government must assess the situation; location, extent, and nature of damage.

This information is important for determining the urgency and requirements for deployment of emergency equipment and personnel.

☐ **STEP 2: SITUATION REPORTS**

Local government will prepare an initial Situation Report , which is a description of the occurrence and nature and extent of the damage.

Basis for damage assessment: The Situation Report allows state OES to coordinate information and data from various affected areas to determine what action(s) may be necessary. It also provides the basis for damage assessment.

The Situation Report, compiled from reconnaissance information, should be sent to OES Region Office within **4 hours of occurrence**. Reports should be updated whenever significant new information is available, but not less than 24 hours after the initial report.

☐ **STEP 3: MUTUAL AID**

The first response is of necessity by local government. If it is determined that the emergency is beyond the capability of local forces, mutual aid, as provided under the Master Mutual Aid Agreement, may then be requested

The Master Mutual Aid Agreement allows local agencies to request voluntary, supplemental assistance from adjoining neighboring jurisdictions.

Request procedure: Mutual aid requests should first be addressed to adjoining cities, then from city to county, and from county to state. **Requests for additional aid must be made by the county to the OES Region.**

The OES Regional Manager may request aid from other counties and from state agencies within the Mutual Aid Region.

Mutual Aid becomes mandatory under a Governor's State of Emergency proclamation.

☐ **STEP 4: LOCAL EMERGENCY DECLARATION**

Should the situation be beyond the capabilities of the jurisdiction to respond, the jurisdiction would then declare a local emergency and request assistance from the operational area and/or the state.

For more information: Refer to Chapter 7 for additional information on mutual aid. That chapter also includes information on the Emergency Managers Mutual Aid (EMMA) program administered by OES.

☐ **2: LOCAL EMERGENCY DECLARATION²**

Declaring a local emergency:	If a local government determines that effects of the emergency are beyond the capability of local resources to mitigate effectively, the next step is to issue a declaration of local emergency. This section describes the process for declaring a local emergency and the conditions for doing so.
Source:	<i>OES, Disaster Assistance Branch, Federal and State Public Assistance Program, Subgrantee Briefing</i>
Authority:	Government Code Sections 8630-8634.
By whom:	City Council Board of Supervisors Person Authorized by local ordinance
When:	Local Declaration must be made within 10 days of occurrence for jurisdictions to qualify for assistance provided under State Natural Disaster Assistance Act and renewed every 14 days.
Purpose:	For a specific situation, such as flood, fire, storm, earthquake, epidemic, drought, sudden and severe energy shortage, or other similar condition; ♦ when there exists a condition of extreme peril to the safety of persons and property; and,

Emergency and Disaster Declaration Process

- ◆ when conditions are beyond the effective response capability of local government.

Information to include:

A Local Emergency Declaration should include information pertaining to:

- ◆ type of disaster
- ◆ date(s) of occurrence, and
- ◆ area(s) affected.

Request for State assistance (financial):

Following the declaration of a local emergency, the concurrence local governing body may:

- ◆ request the Director of the State OES to concur in their declaration of a local emergency and
- ◆ to provide assistance under the California Natural Disaster Assistance Act (NDAA).

Resolution to include:

The resolution adopted by the governing body to request concurrence in a local emergency should indicate the following:

- ◆ the nature and date of the emergency, and
- ◆ the person designated to receive, process, and coordinate all aid.

Required:

To assist the State OES Director in evaluating the situation, and in making a decision on whether or not to concur in the local emergency, the following is required:

- ◆ Local Emergency Declaration
- ◆ Initial Damage Estimate

Other considerations:

- ◆ Provide copies to OES Region and OES Headquarters.
- ◆ The local governing board must review the need for continuing the local emergency declaration at least every 14 days.
- ◆ Termination should be proclaimed at the earliest possible date.

Benefits³:

It is in the best interests of each jurisdiction to declare a local emergency, rather than wait to be included in the county's declaration. In this way, the jurisdiction is authorized to use its additional powers as listed below:

- ◆ activate additional powers and authorities as authorized by its ordinances;
- ◆ extend liability coverage;
- ◆ expand the mutual aid system; and
- ◆ required to receive state and/or federal assistance.

**3: STATE OF EMERGENCY PROCLAMATION⁴****Required:**

Local Emergency Declaration

State assistance:

When a disaster threatens or occurs, local authorities take immediate steps to evacuate citizens, alleviate suffering, and protect life and property.

If additional help is needed, the Governor may direct execution of the State's emergency plan, use State Police or the National Guard, or commit other State resources as the situation demands.

When to request:

A jurisdiction should **request** the Governor to proclaim a state of emergency within 30 days of the incident (20 days if want federal assistance) when the governing body of a city, county, or city and county determine that:

Emergency and Disaster Declaration Process

E r r o	Emergency conditions are beyond the control of the services, personnel, equipment, and facilities of any single county, city, or city and county, and
2	Emergency conditions require the combined forces of a mutual aid region or regions to combat.

When Governor may proclaim:

The Governor may proclaim a state of emergency when:

- ◆ The conditions described above exist, **and either**
- ◆ Governor is requested to do so by governing authority of a jurisdiction (through Local Emergency Declaration), or
- ◆ Governor finds that the local authority is inadequate to cope with the emergency.

Information to include:

Request for a state of emergency proclamation should include:

- ◆ Copy of Local Emergency Declaration
- ◆ Initial Damage Estimate
- ◆ Why State Assistance is Needed

☐ **4: PRESIDENTIAL DECLARATION OF A FEDERAL MAJOR DISASTER OR EMERGENCY⁵**

Source: The following information is excerpted from *A Guide to Federal Aid in Disasters, FEMA, 4/95*.

Requirements: In order for the President to declare a federal major disaster or emergency, the Governor of the requesting state must submit the following:

- ◆ Local Emergency Declaration
- ◆ State of Emergency Proclamation

The Governor's written request for federal assistance must also include⁶:

1. Certification of implementation of the State Emergency Plan.
2. Description of how the disaster caused needs beyond State/local capabilities.
3. A description of State/local resources already committed.
4. Preliminary estimates of supplementary Federal assistance needed.
5. Certification of compliance with cost-sharing requirements of the Stafford Act.

Basis for request: The situation is of such severity and magnitude that effective response is beyond the capabilities of the state and affected local governments, and

Federal assistance under the Stafford Act is necessary to supplement the efforts and available resources of the state, affected local governments, disaster relief organizations, and compensation by insurance.

Definitions: For the purposes of a Presidential Declaration of a Major Disaster or Emergency, the following definitions apply:

Emergency and Disaster Declaration Process

Error! Bookmark not defined.Major disaster	A major disaster is defined as "any natural catastrophe (including any hurricane, tornado, storm, high water, wind driven water, tidal wave, tsunami, earthquake, volcanic eruption, landslide, mudslide, snowstorm, or drought), or, regardless of cause, any fire, flood, or explosion, in any part of the U.S. which in the determination of the President causes damage of sufficient severity and magnitude to warrant major disaster assistance under this Act to supplement the efforts and available resources of States, local governments, and disaster relief organizations in alleviating the damage, loss, hardship, or suffering caused thereby."
Emergency	An emergency is defined as "any occasion or instance for which, in the determination of the President, Federal assistance is needed to supplement State and local efforts and capabilities to save lives and to protect property and public health and safety, or to lessen or avert the threat of a catastrophe in any part of the U.S."

Contents: Following are the major parts of the Presidential Declaration process:

Section	Topic	Page
A	Process to Request a Federal Major Disaster or Emergency	14-12
B	FEMA Processing	14-14
C	Request for Emergency Declaration	14-15
D	The Declaration and Initial Operations	14-16
E	FEMA-State Agreement	14-17

Emergency and Disaster Declaration Process

☐ **A: PROCESS TO REQUEST A FEDERAL MAJOR DISASTER OR EMERGENCY⁷**

Steps to take: If the Governor is considering asking the President to declare a major disaster or an emergency, State disaster and emergency officials, in coordination with other state and local officials should:

Step	Action ⁸
1	Request a FEMA/OES Joint Preliminary Damage Assessment (PDA) to verify the extent of private and public damage.
2	Estimate the types and extent of Federal disaster assistance required.
3	Consult with FEMA Regional Director on eligibility for Federal disaster assistance.
4	Advise the FEMA Regional Director if the Governor requests or intends to request a declaration by the President.

Request must include: The Governor's request for a Presidential declaration of a major disaster or emergency must include the following information:

Topic	Required Information
State Emergency Plan	Certification of implementation of the State Emergency Plan
Damages and losses	Estimate of amount and severity of damages and losses stating the impact on public and private sectors, and describing how the disaster caused needs beyond State/local capabilities.
State resources committed	Information describing the nature and amount of state and local government resources committed, stating specifically those activities for which no federal funding will be requested.
Estimates of assistance needed	Preliminary estimates of the types and amounts of supplementary federal assistance needed, as provided under the Stafford Act (Summarized PDA results).
Cost sharing	Certification by Governor that state and local government obligations and expenditures for the current disaster will comply with all applicable cost-sharing requirements of the Stafford Act, or

Emergency and Disaster Declaration Process

Topic	Required Information
	constitute the expenditure of a reasonable amount of funds for alleviating disaster damages, losses, and suffering.

Exception to application requirements:

- ◆ For catastrophes of unusual severity and magnitude when field damage assessments not necessary to determine the requirements are for supplemental federal assistance.
- ◆ Governor may submit abbreviated expedited request.

Deadlines:

The following deadlines apply to the Governor's request for federal assistance following a major disaster or emergency.

NOTE: Local requests for state and federal assistance must be submitted to the Governor so his staff has enough time to prepare the State's (Governor's) request for federal assistance before the statutory deadlines.

Error! Bookmark not defined. Request for Major Disaster Declaration	must be made within 30 days of incident occurrence
Request for Emergency Declaration	must be submitted within 5 days of the incident occurrence

☐ **B: FEMA PROCESSING⁹**

Steps FEMA take: The following table highlights the steps that FEMA takes after receiving a Governor's request for a Presidential declaration of a major disaster or emergency:

STEP	ACTION
1	The State's completed request, addressed to the President, is sent via the FEMA Regional Director.
2	Regional Analysis prepared from Preliminary Damage Assessment data, information is submitted as part of state request, and consultations among state, federal, and local officials.
3	The Regional Director evaluates the damage and requirements for Federal assistance and makes a recommendation to the FEMA Associate Director (Washington D.C.).
4	The FEMA Director will review Governor's request and Regional Analysis and formulate a recommendation for forwarding to the President with the Governor's request.

Major disaster declaration:

A **Major Disaster Declaration** recommendation by FEMA Regional Director is based on finding of whether or not situation is beyond capabilities of the state and affected local governments.

FEMA will consider factors such as:

- ◆ amount and type of damages
- ◆ availability of state and local resources
- ◆ the extent and type of insurance in effect
- ◆ recent disaster history
- ◆ past hazard mitigation history, etc.

**Emergency
Declaration:**

An **Emergency Declaration** recommendation by the FEMA Regional Director will be based on a report which will indicate whether or not federal emergency assistance is necessary to supplement state and local efforts to save lives, protect property, or avert the threat of a catastrophe.



C: REQUEST FOR EMERGENCY DECLARATION¹⁰

When:

For events that do not qualify under the definition of a major disaster, the Governor may request an emergency declaration to provide assistance to:

- ◆ save lives,
- ◆ protect property,
- ◆ public health and safety, or
- ◆ to lessen or avert the threat of a catastrophe.

Similar procedures:

The procedures for requesting and declaring an emergency are similar to those for major disaster declarations.

**Information
to include:**

As with the request for a major disaster declaration the Governor's request should contain the following specific information:

- ◆ a description of State and local efforts and resources used to alleviate the situation, and
- ◆ a description of the type and extent of Federal aid required.

☐ **D: THE DECLARATION AND INITIAL OPERATIONS¹¹**

After Presidential declaration:

The Governor, appropriate Members of Congress, and Federal departments or agencies are immediately notified.

The director, FEMA, appoints an appropriate FEMA (or other Federal) official as the Federal Coordinating Officer (FCO).

Concurrently with the President's action, the Associate Director, Resource and Recovery, based on the Governor's request:

- ◆ designates the kinds of assistance to be made available, and
- ◆ the counties or other political subdivisions that are eligible to receive such assistance.

FCO responsibilities:

The Federal Coordinating Officer then takes the following steps:

- ◆ Makes an initial appraisal of types of relief most urgently needed
- ◆ Coordinates all Federal disaster assistance programs
- ◆ Coordinates, with their consent, the efforts of private relief organizations, such as the American Red Cross, Salvation Army, and Mennonite Disaster Service.
- ◆ Establishes a temporary Disaster Field Office (FCO) within the affected area to coordinate the disaster relief and recovery effort.

☐ **E: FEMA-STATE AGREEMENT¹²**

Content of agreement: After the President's declaration of a major disaster or an emergency, the Governor and the appropriate FEMA Regional Director execute a FEMA-State Agreement.

The Agreement:

- ◆ prescribes the manner in which Federal aid under the Stafford Act is to be made available.
- ◆ lists the areas within the State which are eligible for assistance;
- ◆ stipulates any division of costs among Federal, State, and local governments;
- ◆ specifies the period officially recognized as the duration of the major disaster or emergency; and
- ◆ contains other conditions of assistance.

Amendment of agreement: If other kinds of assistance are approved on the basis of further information, or additional jurisdictions are designated eligible for assistance, the agreement is amended accordingly.

Federal/state cost share: The division of costs among Federal, State, and local governments is a negotiable item. The minimum federal share under the Stafford Act is 75%. However, depending on the circumstances, the Federal government may assume a larger percentage of the costs.

Example: For the 1994 Northridge earthquake, the Federal/State share was 90%/10%.

The federal/state share is typically 75%/25%, but this varies depending upon the extent of the disaster as outlined in the FEMA/State Agreement for that declaration. It is based upon the State's ability to pay the cost share.

Example: Sometimes a threshold dollar amount is used. For example, for eligible project costs up to \$100,000, the cost share may be 75%/25%, but after that it may be 90%/10% or 100 % reimbursed by FEMA.

REFERENCES

- ◆ Disaster Recovery Public Assistance Applicant Packet for Local Government and Special Districts, Governor's Office of Emergency Services.
- ◆ Overview: Declarations and Assistance," California OES, 1992.
- ◆ A Guide to Federal Aid in Disasters, FEMA 262, 4/95.
- ◆ OES, Disaster Assistance Branch, Federal and State Public Assistance Program, Subgrantee Briefing.

ENDNOTES

1. Overview: Declarations and Assistance, California OES, 1992; A Guide to Federal Aid in Disasters, FEMA 262, 4/95
2. Subgrantee Briefing Package, Federal and State Public Assistance Program, OES Disaster Assistance Branch
3. San Joaquin County Disaster Recovery Manual, 8/95.
4. Ibid.
5. *A Guide to Federal Aid in Disasters, FEMA, 4/95.*
6. Student Manual - Public Assistance Inspector's Course, E-375, FEMA, 11/95, page SM 1-11):
7. Ibid.
8. *A Guide to Federal Aid in Disasters, FEMA, 4/95.*
9. A Guide to Federal Aid in Disasters, FEMA, 4/95.
10. Ibid.
11. Ibid.
12. Ibid.

CHAPTER 15

STATE NATURAL DISASTER ASSISTANCE ACT (NDAA) PROGRAM

Background: The Natural Disaster Assistance Act (NDAA) is activated after:

- ◆ a local declaration of emergency,
- ◆ OES Director's Concurrence with a local declaration,
- ◆ Governor's Proclamation of a State Emergency, or
- ◆ a Presidential Declaration of a Major Disaster or Emergency.

Once the NDAA is activated, local government is eligible for certain types of assistance, depending upon the specific declaration or proclamation issued. This chapter outlines the types of assistance available and the application procedure for requesting that assistance.

Contents: This chapter consists of three sections.

Section	Topic	Page
1	Declaration of a Local Emergency	15-2
	• Funding for NDAA	15-4
	• Cost Share	15-6
	• Withhold or Retention	15-7
2	Assistance Available with a Governor's Proclamation of a State of Emergency	15-8
3	Application Procedure for NDAA Program	15-13

☐ **1: DECLARATION OF A LOCAL EMERGENCY¹**

Level: There are three levels of declaration or proclamation of a disaster or emergency.

Level	Type of Declaration	Assistance Available
1	Director's Concurrence with a Local Declaration	for permanent restoration assistance
2	Governor's State of Emergency Proclamation	for disaster response and permanent restoration assistance
3	President's Declaration of a Major Disaster or Emergency	for matching fund assistance for cost sharing required under federal public assistance programs

NDAAs activated: The Natural Disaster Assistance Act is activated after a local declaration of emergency. Subsequently, the local government may request the Director of OES to concur in their declaration of a local emergency and to provide assistance under the California Natural Disaster Assistance Act (NDAAs).

Required step: To be eligible for assistance under NDAAs, a local agency must declare a local emergency within ten (10) days of the actual occurrence of a natural disaster and the declaration must be acceptable to the Director of the Governor's Office of Emergency Services ((Director's Concurrence), or the Governor must make a State of Emergency Proclamation.

Resolution: The local government must pass a resolution that indicates:

- ♦ the nature and date of the emergency, and
- ♦ the person designated to receive, process, and coordinate all aid.

Note: The resolution designating an authorized agent is usually separate from the resolution declaring a local emergency. For example, a county can declare and all eligible applicants within the county can apply for assistance but each applicant must submit an Authorized Agent Resolution.

Required: To assist the OES Director in evaluating the situation, and in making a decision on whether or not to concur in the local emergency, the following is required:

- ◆ Local Emergency Declaration, and
- ◆ Damage Assessment Report.

Eligible applicants: Applicants eligible to apply for state assistance are:

- ◆ county governments,
- ◆ city governments, and
- ◆ special districts within the area declared a local emergency by a county board of supervisors.

OES letter of concurrence: When a local emergency declaration is been found to be acceptable to the OES Director, OES forwards a letter of concurrence to the local agency:

- ◆ setting forth the beginning and ending dates of the disaster occurrence, and
- ◆ providing the necessary forms for filing and application.

Period of eligibility: Any damage occurring before or after the dates established for the disaster period will not be eligible for state assistance.

Filing deadline: All applications for assistance must be filed within 30 days from the date of the local emergency declaration with the Office of Emergency Services.

☐ **FUNDING FOR NDAAs PROGRAM**

Funding categories: The funding categories for the NDAAs, or California Public Assistance Program, are the same categories as those used in the FEMA public assistance program. The federal and state governments use the same work categories for funding and tracking disaster- or emergency-related project expenditures:

Description Error! Bookmark not defined.Cat egory	Description
Category A	Debris Removal
Category B	Emergency Protective Measures
Category C	Road System Repairs
Category D	Water Control Facilities
Category E	Buildings and Equipment
Category F	Public Utility Systems
Category G	Other (Parks, Recreational Facilities, etc.

Emergency work: This is defined as work undertaken to save lives, protect public health and safety, and to protect property. The two categories that fall into emergency work are:

Category A - Debris Removal, and
Category B - Emergency Protective Measures.

Cost share: NDAAs funding is implemented as a cost share to federal funding assistance once the President has declared a major disaster or emergency, or it may be the only funding available in the event of a Director's Concurrence with a Local Emergency Declaration or a State of Emergency Proclamation by the Governor.

Funding eligibility: Funding under NDAA varies depending upon whether there has been a local emergency declared or whether the Governor has proclaimed a state of emergency.

Note: There must be at least a Director's Concurrence with a Local Emergency Declaration for State funding to be made available to local jurisdictions under NDAA.

Table: The table below shows funding available with each type of declaration.

Type of declaration	Funding	Limitations
Local emergency with a Director's Concurrence	NDAA funding for a Director's Concurrence with a Local Emergency Declaration is limited to costs for permanent restorative work.	Emergency work or debris clearance are not covered in this case. If these types of assistance are needed, the local emergency must be elevated to a Governor's proclamation of state emergency.
Governor's proclamation of a state of emergency	Local jurisdictions become eligible for state funding for: emergency work, debris removal, and permanent restoration.	

Indirect costs: There is an administrative allowance for indirect costs. These include overhead, rent, and utilities. FEMA does not reimburse for these costs. Instead, FEMA pays an administrative allowance based upon a declining percentage of the total costs of the eligible work that is added to each approved DSR.

The declining percentage is dependent upon the accumulated dollar amount obligated for that applicant. For example, it is 3% for the first \$100,000 obligated, 2% for the next \$900,000 obligated, 1% for the next \$4,000,000 obligated, and 0.5% for accumulated costs over \$5,000,000.

NDAAs Program

- 10% rate:** NDAA allows a local agency to apply a flat 10% rate against eligible direct labor costs, excluding employee benefits, to develop a reimbursable indirect cost. To receive up to 40%, the agency must prepare an Indirect Cost Rate Proposal (ICRP), according to OMB Circular A-87. An NDAA applicant must have a current ICRP at the time of final inspection to recover any rate above the minimum 10% flat indirect cost rate.
- Minimum amounts:** State OES will no longer fund DSRs less than \$1000, or any other DSRs that FEMA declares ineligible. As of September 13, 1996, in a Presidential declared disaster, OES will only pay the State's portion of the non-federal share of costs deemed eligible for funding by FEMA (refer to attached memo from Richard Andrews, Director, regarding: State Funding for Public Assistance Projects, Attachment B).
- The accumulative State share for an applicant has to total \$2,500 at a minimum before that applicant can receive any state funding.
- What to file:** There is no need for local government to apply for the state program separately if federal funding is requested.
- If it is a state-only disaster, then the jurisdiction will have to file an application because state funding will be the only funding available.

• COST SHARE

- Local share: :**
- ◆ FEMA pays a minimum of 75% of the eligible disaster-related costs.
 - ◆ State OES generally pays up to 75% of the remaining 25% (of the non-federal share).
 - ◆ Local government is responsible for 25% of the non-federal share, or 6.5% of total eligible costs. However, this 6.5% can be less, depending upon the circumstances.
- Federal share:** NDAA funding is implemented as a cost share to federal funding assistance once the President has declared a major disaster or emergency.

The State will pay up to 100% of the 25% non-federal share where there is a legislative enactment indicating such intent (i.e., as with the 1989 Loma Prieta Earthquake, 1991 East Bay Fire, and 1994 Northridge Earthquake).

State agencies and private non-profits receive no funding under the NDAA.

☐ **WITHHOLD OR RETENTION**

Federal withhold: In general, OES withholds 25% of the federal share until final inspection for state agencies and private non-profits; 10% of the federal share for cities and counties. However, there are exceptions for reduced withholdings.

Local government can request a partial inspection to close out the project and receive the withhold.

State retention: There is 10% retention of the State share.

More information: For more specific information and forms to complete to apply for state assistance through the Natural Disaster Assistance Act (NDAA), refer to the Applicant's Briefing Packet for Local Governments and Special Districts available from the Disaster Assistance Division of the Office of Emergency Services.

☐ **2: ASSISTANCE AVAILABLE WITH A GOVERNOR'S PROCLAMATION OF A STATE OF EMERGENCY²**

State assistance available:

Under a State of Emergency Proclamation, the Governor has the authority to:

- ◆ expend budgeted or emergency funds;
- ◆ use state resources (i.e, California National Guard, California Conservation Corps, CCC); and
- ◆ direct all agencies to utilize and employ state personnel, equipment, and facilities to avert or alleviate actual or threatened disaster damages.

Mutual aid:

Master Mutual Aid Agreement allows local agencies to request voluntary, supplemental assistance. Mutual aid becomes mandatory under a Governor's State of Emergency proclamation.

NDAAs assistance:

The Natural Disaster Assistance Act provides financial aid to local agencies to assist in the permanent restoration of public real property, other than facilities used solely for recreational purposes, when such real property has been damaged or destroyed by a natural disaster.

Definition:

"Natural disaster," as defined, means a fire, flood, storm, tidal wave, earthquake or other similar public calamity resulting from natural causes, which, due to the magnitude of the occurrence, warrants the declaration of a "Local Emergency" by the governing body of the county or city in which the disaster has occurred.

Amount of assistance:

The amount of state assistance which may be received by an eligible applicant is based on a formula in the law to compute the respective shares of the state and the local agency.

Factors:

The formula takes into consideration the following factors in determining amount of assistance:

- ◆ estimated cost of eligible work; and

- ◆ the local agency's revenues for the prior fiscal year, which is separated into two separate types of projects:
- ◆ Public Facilities Projects and
- ◆ Street and Highway Projects.

☐ EXAMPLES

State/federal assistance:

Following are some examples of state and federal assistance after a Governor's proclamation of a state emergency.

AGENCY	HOW TO REQUEST	REQUEST TO INCLUDE	LIMITATIONS
STATE ASSISTANCE			
California Conservation Corps	Direct requests for CCC resources through the OES Operational Area Emergency Operations Center (OA EOC) to the Regional Emergency Operations Center (REOC).	<p>In requesting CCC assistance through the OES, include the following information:</p> <p>Nature of problem and why resource needed Approximate number of personnel required, and Approximate duration of assignment</p> <p>State OES will provide a mission assignment number and information on crew availability.</p>	<p>Specialized equipment must be provided by requesting jurisdiction</p> <p>Crews work 40 hour week; overtime normally paid by the requesting jurisdiction</p> <p>When working beyond commute range, requesting jurisdiction normally requested to supply food and housing; and</p> <p>Requesting jurisdiction required to provide technical and logistical guidance, when necessary.</p>
California	Direct requests for	Mission Statement	

NDAAs Program

AGENCY	HOW TO REQUEST	REQUEST TO INCLUDE	LIMITATIONS
National Guard	use of National Guard resources through the local area to the Operational Area to the REOC.	<p>(when, why, what) Operating conditions</p> <p>Point of contact (who)</p> <p>State OES will provide a mission assignment number to the CNG.</p> <p>The mission number goes to the state agency for tracking purposes. It is not a guarantee for cost reimbursement.</p>	
FEDERAL ASSISTANCE			
U.S. Army Corps of Engineers	Disaster assistance for public elementary and secondary schools. Request assistance through the SEMS procedure: resource request to the local area, operational area, REOC, State Operations Center, FEMA.		
Federal Highway Administration	Provides financial assistance for repair or reconstruction of highways on the Federal Aid System which have sustained serious damage as a result of a disaster, concurred with by the Administrator, Federal Highway Administration	Follow SEMS as above: local area, operational area, REOC, State Operations Center, FEMA.	<p>Permanent repair work should not be initiated until the Title 23 program implemented and specific projects approved.</p> <p>Program may also be implemented as part of a major disaster declaration.</p>

☐ 3: APPLICATION PROCEDURE FOR NDAA PROGRAM³

Application forms: In order to receive payment your organization must submit the following State Natural Disaster Assistance Act (NDAA) Program forms:

- ◆ Exhibit D (OES Form 96)
- ◆ Applicant Approval Form for Natural Disaster Assistance
- ◆ NDAA Form 3 - OES Form 125)
- ◆ Request for Advance of Funds State NDAA Program

Application procedure: The table below identifies the steps to be taken in applying for federal assistance under the Robert T. Stafford Act.

Error! Bookm ark not define d.STEP	WHO	ACTION TO BE TAKEN
1	Local government	File Project Application for assistance (NDAA Form 1) within 60 days of the date of the local declaration
		Application must include: List of Projects (Exhibit B) and a Resolution Designating an Authorized Representative (OES Form 130)
		Under a federal declaration, the NOI and Exhibit "B" serve as applications for the NDAA (National Disaster Assistance Act) Program.
2	FEMA/OES	Under 9/13/96 policy, when there is a federal declaration, no state DSR is prepared and NDAA only funds state portion of non-federal share of eligible federal DSRs.
3	OES	State DSRs are then reviewed and obligated. A state "supplement package" similar to the federal package will be transmitted to you by OES. Normally, the State share is 75% to 100% of the non-federal eligible share, depending upon the Federal/State Agreement for that disaster.

NDAAs Program

Error! Bookmark not defined. STEP	WHO	ACTION TO BE TAKEN
		The subgrantee is responsible for 25% of the non-FEMA eligible share. State agencies and private non-profit organizations are responsible for the entire non-FEMA eligible share.
		Your state supplement package will include <ul style="list-style-type: none"> • Computer generated NDAA DSRs and backup • Exhibit "D" (Form OES 96) • Request for NDAA Advance (NDAA Form 3)
	Local government	Upon completion and submittal of the OES 96 and NDAA 3, you can receive an advance of up to 90% of the state share prior to the final inspection.

Project funding approval:

Site Rule: all sites must be surveyed within 60 days of the date of a local agency's application.

DSRs are approved for funding by the OES Public Assistance Officer (PAO).

DSRs are reviewed and approved by applicant representatives on-site prior to submittal to OES for PAO concurrence/approval and funding.

Complete application with copies of approved DSRs, DSR summary, and cover letter, are sent to applicants for review and approval.

Applicant approval:

(Exhibit D) must be returned to OES, Disaster Assistance Branch, within 10 days, from the date of approval letter.

Supplements:

May be approved for:

- ◆ overruns/Underruns (Cost Adjustments);
- ◆ changed site conditions/scope adjustments.

Supplements should be requested at the earliest possible time and prior to completion of the work in question.

Requests for a change in scope **must** be filed prior to work commencement.

Funding:

Upon completion and submittal of the OES Form 96 and the NDAA Form 3, the jurisdiction can receive up to 90% of state share; the 10% balance is released after the Final Inspection Report is completed and/or audit is completed by the Office of the State Controller and reviewed by OES for concurrence.

Completion deadline:

When federal funds involved, the federal deadlines apply.

For the OES Director's Concurrence with a local declaration or a Governor's Proclamation of a state of emergency, the following deadlines apply:

Work Category	Time Extension
Debris clearance	6 months from date of local declaration
Emergency work	6 months from date of local declaration
Permanent work	18 months from date of local declaration
	Extensions allowable with adequate justification.

Final claim:

Applicant must submit final claim within 60 days of the completion of **all** approved projects.

Inspection:

A state engineer will complete an on-site inspection of all completed projects.

Audit:

Claims including more than \$50,000 in state assistance will be subject to field audit.

OES contracts with the State Controller's Office to perform audits of expended state and federal funds.

Local government must retain records for at least three years after receipt of the last payment .

Fair hearing process: Pursue all avenues for appeal. For the state program, there are two levels of appeal, with the Director of OES having the authority to make the final decision.

Level	Appeal
Level One:	Discussion with State Program Coordinator
Level Two	The second level appeal is submitted to the Director of OES for consideration and response.
	Director's decision is final.

ATTACHMENTS

- A. Memo from Richard Andrews, Director, regarding: State Funding for Public Assistance Projects

REFERENCES

- ◆ Disaster Assistance Branch, Federal and State Public Assistance Programs, Subgrantee Briefing Packet, OES.
- ◆ Disaster Assistance Procedure Manual, OES, 1985.
- ◆ State Natural Disaster Assistance Act (NDAA), as amended.
- ◆ Title 19, Subchapter 5, the Natural Disaster Assistance Act, California Code of Regulations.

ENDNOTES

1. Disaster Recovery Public Assistance Applicant Packet for Local Government and Special Districts, Governor's Office of Emergency Services.
2. Ibid.
- 3 . Ibid.

CHAPTER 16

FEDERAL PUBLIC ASSISTANCE PROGRAM

Background: The Federal Public Assistance Program provides supplementary assistance to public entities--state, and local governments and certain eligible private non-profit organizations. The *Federal Response Plan* is activated only after a Presidential Declaration of a Major Disaster or Emergency. Refer to Chapter 1, Government Coordination, for a discussion of the *Federal Response Plan*.

Contents: This chapter contains 10 sections:

SECTION	TOPIC	PAGE
1	Required Steps	16-2
2	Work Categories	16-3
3	Federal assistance to state and local governments	16-8
4	Regulations Governing Disaster Assistance	16-11
5	Debris Removal Guidelines	16-15
	Debris Eligibility Criteria	16-16
	Debris Removal Eligibility	16-18
6	Public Assistance Building Demolition Program	16-21
	Health and Safety	16-23
	Attractive Nuisance	16-26
	Health Hazard	16-26
	Buy-out Program	16-27
7	Damage Assessment and Damage Survey Reports	16-30
8	Environmental Review Requirements	16-34
9	Hazard Mitigation	16-37
10	Historic Review Requirements	16-37

☐ **1: Required steps**

In order to receive federal assistance, a local agency must take the following steps after a disaster or emergency:

STEP	ACTION
1	The local government must issue a Local Declaration of an emergency within 10 days after the emergency.
2	The Governor must issue a State of Emergency Proclamation.
3	The President must issue Declaration of a Major Disaster or Emergency.

Authorities:

- ◆ Robert T. Stafford Disaster Relief and Emergency Assistance Act;
- ◆ Title 44, Code of Federal Regulations, Part 206 State Administrative Plan for Public Assistance.

Applicants:

- ◆ state agencies;
 - ◆ counties;
 - ◆ cities;
 - ◆ special districts;
 - ◆ schools K-12;
 - ◆ colleges and higher education; and
 - ◆ certain private non-profit organizations that provide essential governmental service to the general public are eligible.

Work Eligibility

Work **must** be:

- ◆ required as a result of a declared major disaster event;
- ◆ located within a designated disaster area;
- ◆ legal responsibility of an eligible subgrantee; and
- ◆ must not duplicate benefits from other federal agencies.

☐ 2: Work categories

Damage categories: The following work categories are used by both the state and federal governments relative to funding through the Stafford Act and the Natural Disaster Assistance Act. Local governments must use these categories when preparing damage survey reports and in tracking state and federal disaster or emergency-related expenditures.

For management purposes, FEMA has established the following categories of damage:

- ◆ **Emergency Work** = Categories A and B for emergency actions
- ◆ **Permanent Work** = Categories C through G for permanent repair, restoration and replacement.

Work Categories		Purpose	Completion Deadlines*
Category A	Debris removal and disposal	<p>Clearance of debris and wreckage from publicly and privately owned land and waters.</p> <p>Clean-out of reservoirs, debris catch basin, streams, and opening channels or facilities.</p> <p>Measures undertaken to preserve public health and safety and to eliminate threats to public or private property.</p>	6 months
Category B	Emergency Protective Measures	Measures undertaken to preserve public health and safety and to eliminate threats to public or private property.	6 months
Category C	Road Systems	Eligible facilities include any construction features within the public right of way that are essential to make the road or	18 months

Federal Public Assistance Program

Work Categories		Purpose	Completion Deadlines*
		street functional, such as: Bridges Drainage structures Embankments Safety features	
Category D	Water Control Facilities	Flood control, drainage, and irrigation works which are operated, controlled or maintained by an eligible subgrantee may be eligible for repair, restoration, or replacement. Examples include: Dikes and levees Irrigation Works Drainage Channels Debris Basins	18 months
Category E	Public Buildings and Equipment	Public buildings and related equipment, owned or maintained by an eligible subgrantee, which are damaged or destroyed, are eligible to the extent not covered by insurance. Also included are: Office equipment Furnishings and equipment Consumable supplies Library books and publications	18 months
Category F	Public Utilities	Includes the permanent repair, restoration, or replacement of water, power, or sewage systems, to the extent necessary to restore services, in accordance with current codes, specifications, and standards.	18 months
Category G	Other	Includes the permanent repair, restoration, or replacement of park facilities such as playgrounds, swimming pools, boat docks, tennis courts, picnic tables, etc.	18 months

Federal Public Assistance Program

Work Categories		Purpose	Completion Deadlines*
		Note: This category also used to report items that are not included in the other categories.	

*dates established from date of major disaster declaration

**With justification, the Governor's Authorized Representative may extend completion deadlines.

Federal Public Assistance Program

Time Extensions

With justification, the Governor's Authorized Representative **may** extend completion deadlines.

Category	Extension	What to do	Information to include
Debris Removal	6 months of date of disaster	If projects (DSR categories A-B) extend beyond these deadlines, submit a time extension request to OES.	Reference the DSR number and category for each project requiring an extension. Include justification as to why the project could not be completed within the deadline.
Emergency Protective Measures	6 months of date of disaster	If projects (DSR categories A-B) extend beyond these deadlines, submit a time extension request to OES.	Reference the DSR number and category for each project requiring an extension. Include justification as to why the project could not be completed within the deadline.
Permanent Work	18 months of the declaration date 30 months on a project-by-project basis	If permanent projects (DSR categories C-G) extend beyond these deadlines, submit a time extension request to OES.	Reference the DSR number and category for each project requiring an extension. Include justification as to why the project could not be completed within the deadline.

Additional extensions are subject to FEMA approval.

Remember: Costs are allowed only to date of last approved time extension.

Emergency work:

Public interest defined as measures **necessary** to:

Federal Public Assistance Program

- ◆ Eliminate or lessen immediate threats to life, public health, or safety, or threats of significant additional damage to improved public or private property; or
- ◆ Ensure economic recovery of community at large.

Permanent restoration:

Work undertaken to restore eligible facilities on the basis of the design of such facilities, as such facilities existed immediately prior to the disaster, in conformity with current codes and standards.

Administrative costs:

Allowance for necessary costs of requesting, obtaining, and administering federal disaster assistance sub-grants

Sliding Scale: The declining percentage for administrative allowance is based upon the total dollar value of the federal assistance provided (sum of the federal share of all obligated DSRs).

Total \$ value of federal assistance provided	Administrative Allowance
First \$100,000	3 percent
Over \$100,000 to \$1,000,000	2 percent
Over \$1,000,000 to \$5,000,000	1 percent
Over \$5,000,000	.5 percent

☐ **3: FEDERAL ASSISTANCE TO STATE AND LOCAL GOVERNMENTS**

Briefings:	OES conducts briefings for state, local, and private non-profit organizations as soon as practicable after the declaration of a major disaster or emergency. The purpose is to provide information on the types of assistance available and the means by which funds are provided. Applications for assistance (Notice of Interest) are usually accepted at these briefings to expedite the application process.
Inspection team:	Federal/State/local team inspects every damaged site listed on the applicant's Exhibit B (List of Projects) submitted with the Notice of Interest.
Damage survey reports:	After inspections by the Federal/State/local inspection team, the Federal inspector prepares a Damage Survey Report (DSR). The DSR identifies the project and its location and provides a recommended scope of work and estimated cost in accordance with FEMA eligibility criteria.
Eligible applicants:	<p>Eligible applicants for assistance are:</p> <ul style="list-style-type: none">◆ State governmental agencies/departments;◆ local governments;◆ Indian tribes or authorized tribal organizations;◆ Alaska native villages or organizations; and◆ qualifying private nonprofit institutions within the designated disaster area.
Non-profits	<p>Eligible private non profit institutions are:</p> <ul style="list-style-type: none">◆ educational,◆ utility,◆ emergency,◆ medical,◆ custodial care, and◆ those providing essential services of a governmental nature.

Federal Public Assistance Program

Assistance for emergency declaration	Assistance for major disaster declaration
<p>Under an emergency declaration, assistance may be approved for:</p> <ul style="list-style-type: none"> ◆ public health and safety, ◆ emergency measures necessary to save lives, ◆ clearance of debris, ◆ protection of property, and ◆ to lessen or avert the threat of a catastrophe, ◆ limited to \$5 million (may be increased), and ◆ Governor must request within 5 days of the emergency. 	<p>Under a major disaster declaration, assistance may be approved to fund a variety of projects, including:</p> <ul style="list-style-type: none"> ◆ Must be requested by Governor within 30 days following the incident; ◆ Clearance of debris, when in the public interest, on public or private land or waters; ◆ Emergency protective measures for the preservation of life and property; ◆ Repair or replacement of roads, streets and bridges; ◆ Repair or replacement of water control facilities (dikes, levees, irrigation works, and drainage facilities); ◆ Repair or replacement of public buildings and related equipment ◆ Repair or replacement of public utilities; and ◆ Repair or restoration of recreational facilities and parks.

Compliance requirements:

The applicant must comply with appropriate hazard mitigation, environmental protection and floodplain management regulations as a condition for receiving Federal disaster assistance.

Other forms of assistance:

Other forms of assistance that may be made available under a Presidential declaration or a major disaster include:

Federal Public Assistance Program

- ◆ Community disaster loans from FEMA to communities that may suffer a substantial loss of tax and other revenues and can demonstrate a need for financial assistance in order to perform their governmental functions;
- ◆ Repairs and operating assistance to public elementary and secondary schools by the Department of Education;
- ◆ Use of federal equipment, supplies, facilities, personnel, and other resources (other than the extension of credit) from various Federal agencies;
- ◆ Repairs to Federal-aid system roads when authorized by the Department of Transportation; and
- ◆ Repairs to projects when authorized by the United States Army Corps of Engineers or the Soil Conservation Services.

☐ 4: REGULATIONS GOVERNING DISASTER ASSISTANCE

Background:	Upon the declaration of a local emergency or a state or federal disaster, state and federal assistance programs become available to help affected states and their jurisdictions in the recovery process.
Regulations:	The regulations governing the public, infrastructure, and individual assistance programs administered by the state and federal governments are listed below.
Be prepared:	It is a good idea to regularly review updates to these regulations as they may have an effect on the types of programs funded and the funding allocated.
Know what you're entitled to:	Know the kinds of assistance your jurisdiction is entitled to and the conditions for receiving that assistance. Keeping current with the most recent changes to the regulations can help when developing the Damage Survey Reports (DSRs) with FEMA.
DSRs:	The DSRs serve as the basis for FEMA and OES reimbursement for the recovery work to be performed and the costs associated with that work.

Federal Public Assistance Program

Federal Regulations	
The Robert T. Stafford Disaster Relief and Emergency Assistance Act	This act summarizes the process and procedures for declaration, response, and recovery during federally declared disasters.
<p>Code of Federal Regulations Title 44 Part 13 - Uniform Administrative Requirements for Grants and Cooperative Agreements to State and Local Governments:</p> <ul style="list-style-type: none"> ◆ Subpart A - General, ◆ Subpart B - Pre-Award Requirements, ◆ Subpart C - Post-Award Requirements, ◆ Subpart D - After-the-Grant Requirements 	These regulations describe the administrative procedures and requirements for subgrantees receiving federal funding and awarding contracts for disaster-related repairs
<p>Code of Federal Regulations Title 44 Part 206 - Federal Disaster Assistance for Disasters Declared on or after November 23, 1988:</p> <ul style="list-style-type: none"> ◆ Subpart G - Public Assistance Project Administration, ◆ Subpart H - Public Assistance Eligibility, ◆ Subpart I - Public Assistance Insurance Requirements, ◆ Subpart J - Coastal Barrier Resources Act, ◆ Subpart K - Community Disaster Loans, ◆ Subpart M - Hazard Mitigation Planning, ◆ Subpart N - Hazard Mitigation Grant 	These sections describe rules and requirements for Public Assistance Project Administration, applicant and work eligibility, and hazard mitigation.

Federal Public Assistance Program

Program.	
State Regulations	
The California Natural Disaster Assistance Act - Chapter 7.5 The California Natural Disaster Assistance Act - Title 19, Subchapter 5	This act outlines provisions for state disaster assistance.
Office of Budget and Management Publications	
Circular A-87 - Cost Principles for State and Local Governments Circular A-122 - Cost Principles for Nonprofit Organizations Circular A-128 - Audits of State and Local Governments	These publications provide information on eligible reimbursable costs and audit requirements for eligible subgrantees.

☐ **5: DEBRIS REMOVAL GUIDELINES¹**

Source: Debris Management Course (pilot), Reference Manual, Emergency Management Institute, FEMA.

What's eligible: Upon the Presidential declaration a major disaster or emergency, Federal assistance is available. FEMA designates the area eligible for assistance and the types of assistance available.

FEMA may grant assistance for:

- ◆ debris removal,
- ◆ emergency protective measures, and
- ◆ the permanent restoration of facilities.

Contents: The following information is presented below:

Subsection	Topic
A	Debris Eligibility Criteria
B	Debris Removal Guidelines

☐ **A: DEBRIS ELIGIBILITY CRITERIA**

Must be for: Debris removal and emergency protective measures must be necessary to:

- ◆ Eliminate immediate threats of life, public health, and safety; or
- ◆ Eliminate immediate threats of significant damage to improved public or private property.

The following criteria apply to all types of work and to all applicants. There may be additional criteria for specific types of work or facilities.

Debris Eligibility Criteria Basic criteria for all assistance to be eligible are that work or expenses must be:	
A result of the declared event and not of a pre-disaster condition or some other event	<p>Direct result. The work must be required as a direct result of the declared event--severe storm, flooding, earthquake, etc.</p> <p>An "incident period" established by FEMA after consultation with the Governor's Authorized Representative generally begins at the start of the event and lasts as long as necessary to include all normal damages from the event.</p> <p>Primarily, damages that occur during the incident period, or are the direct result of events that occurred during the incident period, will be considered for eligibility.</p> <p>In addition, protective measures and other preparation activities performed within a reasonable time in advance of the event will also be considered.</p> <p>Damages that occur after the close of an incident period but can be tied directly to the declared event may also be eligible.</p>
Be within the area designated by FEMA as eligible for assistance.	<p>Designated area. The damages must have occurred, or the work or activity may be performed or support the performance of such work, within the designated disaster area.</p> <p>When a declaration of a major disaster is made for a State, the Associate Director designates those counties of the State that are eligible for assistance.</p>

Federal Public Assistance Program

Debris Eligibility Criteria	
Basic criteria for all assistance to be eligible are that work or expenses must be:	
	<p>The type of assistance is also specified: public assistance (for State and local governments and for Public Non-Profit organizations) and individual assistance (for individuals and families).</p> <p>Different counties may be eligible for one or both types of assistance, depending on the needs of the area.</p>
Be the legal responsibility of the applicant.	<p>Responsibility. The work or expense must be the legal responsibility of the applicant. Generally, ownership of a facility is sufficient to establish responsibility for repairs a facility.</p> <p>Mutual aid agreements between local governments or between a local government and the State may establish the responsibility for reimbursement by the government receiving the assistance.</p>
Not eligible for assistance under another Federal program.	<p>Cost. Reasonable costs directly attributed to a project are generally eligible. They include labor, materials, and equipment costs when the applicant performs the work itself (force account) or contracts awarded for the work.</p>

☐ **B: DEBRIS REMOVAL ELIGIBILITY**

Includes: Debris that may be eligible for clearance and removal includes:

- ◆ trees,
- ◆ sand and gravel,
- ◆ building wreckage,
- ◆ vehicles,
- ◆ personal property, etc.

Must be for: To be eligible for FEMA assistance, such removal must be necessary to do one of the following:

- ◆ Eliminate immediate threats of life, public health, and safety; or
- ◆ Eliminate immediate threats of significant damage to improved public or private property.
- ◆ Ensure economic recovery of the affected community to the benefit of the community-at-large

Debris Removal Guidelines	
Debris removal from public property	<p>Debris that is on public property must be removed to allow continued safe operation of governmental functions and , therefore, if eligible under one of the first two criteria.</p> <p>However, not all public property clearance is necessarily eligible.</p>
Private property	<p>This is the responsibility of the individual property owner aided by insurance settlements and assistance from volunteer agencies.</p> <p>Most homeowner fire and extended coverage insurance policies have specific coverage for debris removal and demolition of heavily damaged structures.</p> <p>FEMA assistance is not available to reimburse private property owners for the cost of removing debris from their property.</p> <p>However, an eligible local or State may government may pick up and dispose of disaster-related debris placed at the curb by those private individuals.</p>

Debris Removal Guidelines	
	<p>If the debris on private business and residential property is so widespread that public health, safety, or the economic recovery of the community is threatened, the actual removal of debris from the private property may be eligible. In such situations, the work normally must be done or contracted by an eligible applicant.</p>
Drainage structures	<p>Debris removal from certain drainage structures may have to meet the following criteria:</p> <p>Reservoirs: may be eligible in accordance with the criteria for debris basins below. Removal of debris that poses an immediate threat of clogging or damaging intake or adjacent structures may be eligible.</p> <p>Natural streams: Not normally eligible for assistance. Only debris that causes a threat to lives or public health and safety or damage to improved property from a 5-year flood event is eligible.</p> <p>Engineered channels and debris basins: May be eligible. The pre-disaster level of debris in the channel or basin is of particular importance to determine the amount of disaster-related debris.</p>
Roads and Highways	<p>Debris may be cleared from roads and highways, including the travel lanes and shoulders, roadside ditches and drainage structures, and the maintained right-of-way.</p> <p>Clearance from Federal-aid roads and highways follows these criteria except when the Emergency Relief (ER) program of the Federal Highway Administration (FHWA) is activated.</p> <p>Debris on undamaged sections of highway may be eligible for FEMA assistance.</p>
Recreational and Wilderness Areas	<p>Debris removal is eligible when it affects public health or safety or proper utilization of such facilities.</p> <p>Trees frequently constitute a large part of debris in these areas, and special guidance is noted below:</p> <p>Debris in wilderness or forested areas of these facilities that does not pose a health or safety threat is not eligible.</p>

Debris Removal Guidelines	
	<p>Hazardous trees within a naturalized area of parks or golf courses that are unstable and leaning into the areas used by the public are eligible for removal only, not replacement.</p> <p>Generally, stump removal should not be considered eligible for reimbursement except when a tree eligible for replacement must be replanted in the same spot of it is determined that the stump itself would be a hazard.</p>

☐ **6: PUBLIC ASSISTANCE BUILDING DEMOLITION²**

Source: The following information is excerpted from the Reference Manual of the Debris Management Course (pilot) prepared by the Emergency Management Institute, National Emergency Training Center, FEMA, pp. 59-65.

Contents: Information relative to establishing a diversion program for building demolition is contained in Chapter 9, Building Demolition Program.

The information below describes the types of demolition work that are eligible for federal public assistance demolition funding under section 403, Essential Services, of the Stafford Act.

This section allows for the demolition of unsafe structures that pose an immediate threat to life, property, and public health and safety.

Four types: There are four basic types of work that may be eligible for Public Assistance demolition funding under section 403. They are:

Subsection	Topic
A	Health and Safety
B	Attractive nuisance
C	Health hazard
D	Buy-out Program

The eligible scope of work varies depending on which of these four types the Damage Survey Report (DSR) classifies the work as.

Federal Public Assistance Program

Check the block under Category "A" Debris Clearance - Structural Demolition on the Notice of Interest form if the potential exists for demolition of structures for reasons of health and safety, attractive nuisance, or health hazard.

If the potential demolition is a result of a buy-out program, the buy-out funding agency notifies FEMA Public Assistance.

NOTE: The term "applicant" refers to the **jurisdiction** that is applying for the federal funding.

Process:

1. The applicant (jurisdiction) is contacted by a FEMA representative to schedule a site inspection.

(The DSR inspection team is normally comprised of a FEMA DSR inspector, a State representative, and a representative of the applicant.)

2. The applicant is asked to provide:
 - ◆ list of properties to be inspected
 - ◆ (include owner's name, street address, and the Tax or Parcel identification number),
 - ◆ map identifying each property,
 - ◆ local representative to be part of the inspection team, and
 - ◆ insurance information, if available.
3. The DSR inspection team does not enter into any structure at the time of the inspection. All measurements are taken from the exterior of the structures.

The FEMA inspector, in agreement with the State inspector and local representative, determines if the structure is 50% or more damaged and makes notation of this determination on the DSR.

The DSR includes all the properties identified by the applicant within a specific geographical area, such as

a subdivision.

If several different geographical areas are identified a separate DSR is written for each area. The DSRs are compiled to be closed out as one project.

Costs:

NOTE: The costs shown on the DSR(s) are only an estimate because there may be a number of variables included in a demolition project, such as:

- ◆ asbestos abatement,
- ◆ hazardous materials removal and disposal,
- ◆ hauling distances,
- ◆ landfill tipping fees,
- ◆ third party air monitoring,
- ◆ local code requirements pertaining to demolition practices, etc.

4. The eligible work identified on the DSR may be accomplished by force account with adequate documentation or by contract work.

When the DSR(s) contain more than one property, the applicant may choose to break up the demolition work into several demolition packages.



A: HEALTH AND SAFETY

Responsibility:

The primary responsibility for demolition of unsafe structures lies with the owner. Most insurance policies have a clause that provides payment for demolishing houses damaged beyond repair.

The applicant must certify that:

- ◆ no insurance exists that would pay for the demolition,
- ◆ the owner is not capable of paying for such work, and
- ◆ there is no opportunity to recoup the cost from the owner.

Federal Public Assistance Program

Condemnation: If permission for demolition is not provided, the applicant must follow legal condemnation. The applicant must obtain rights of entry and hold harmless agreements prior to start of the work. The ownership of the property remains in the hands of the original owner.

Checklist: All properties must be reviewed for historic significance, hazardous materials, endangered species, and other appropriate regulations prior to Federal funds being provided for the demolition.

The State emergency management division provides each applicant with a demolition checklist which the applicant must complete and return prior to any actual demolition of the property.

The checklist provides a partial list of items with which the applicant must comply prior to demolition. These items include:

- ◆ verification that the applicant has obtained rights of entry
- ◆ hold harmless agreements, and
- ◆ investigation of insurance coverages and liens.

Forms: The applicant will also be provided forms pertaining to requirements for SHPO, hazardous materials, and endangered species. The applicant must sign and return these forms indicating he has read them and understands that it is his responsibility to assure full compliance with all Federal, State and local rules and regulations regarding the information provided on the form.

The applicant must provide a copy of the bid specifications, final property list, and bid results prior to demolition.

Authorization: Once FEMA approves the demolition of properties identified in the demolition bid, the State emergency management

division provides the applicant with written authorization to proceed with the demolition project.

Eligible work:

Eligible work is limited to the demolition and removal of structures and other improvements that may represent an immediate threat to public health and safety.

Structures that are in danger of collapse are documented on a DSR and recommended as eligible for demolition.

Other eligible scope of work may include cleaning septic tanks, backfilling basements, capping wells, cleaning up debris, and any other items that may represent an immediate threat to public health and safety.

Items such as slabs on grade, driveways, fences, structurally sound buildings, etc., are not eligible under the public health and safety category.

Project completion:

At the completion of the project, the State notifies FEMA that the applicant's demolition has been completed. A joint FEMA/State team inspects the applicant's demolition sites to assure full compliance with the scope of work identified in the DSR.

Eligible costs may include any cost incurred by the applicant to complete the scope of work identified on the DSR.

Every property must be reviewed by the State Historic Preservation Office (SHPO) prior to any demolition. Costs associated with the applicant's obtaining SHPO clearance may be eligible for FEMA PA demolition funding.

Each structure must be inspected for hazardous materials prior to actual demolition of the structure. Costs associated with asbestos inspections, asbestos abatement, third party air monitoring, etc., may be eligible for FEMA PA demolition funding.



B: ATTRACTIVE NUISANCE

Eligible work:

Eligible work under this category is limited to closing openings around the perimeter of the structure to prevent entrance into the structure and may include fencing where necessary. To secure the structures from access, the FEMA DSR inspector can provide funding for materials (plywood, fencing, etc.) and labor through the DSR process. This finding meets the required need to protect life and safety.

This type of work for securing structures does not apply to properties acquired through an eligible buy-out program. Eligible FEMA public assistance for these properties is for demolition of the structures and other improvements.



C: HEALTH HAZARD

Cleaning:

If a building is structurally sound but has not been cleared of household debris, food, and other items that represent a health hazard, the scope of work on the DSR may include the cost of cleaning and removing such items.

The primary responsibility for this cleanup lies with the owner. The applicant must certify that:

- ◆ no insurance exists that would pay for such work;
- ◆ the owner is not capable of paying for such work, and
- ◆ there is no opportunity to recoup the cost from the owner.

The applicant must obtain rights of entry and hold harmless agreements prior to start of the work.

☐ **D: BUY-OUT PROGRAM**

Purpose: The intent of an eligible buy-out program is to remove structures and other improvements on acquired properties from harm's way, thus eliminating the need for future Federal assistance.

Scope of work: The eligible scope of work for FEMA PA demolition funding under a buy-out program includes demolition and removal of all structures and other improvements on the property acquired.

Eligible properties: Properties that are abandoned as a result of an eligible hazard mitigation program may qualify as actual or potential sources of endangerment to the public.

All structures and other improvements are to be completely removed from the surface of the acquired property in order for the property to be returned to its natural state.

Source of funding: The buy-out funding source for an eligible hazard mitigation program would normally be through FEMA Hazard Mitigation Grant Program section 404 of the Stafford Act or through Community Development Block Grant funding.

Ineligible funding

Funding sources such as urban development funding, private funding, National Flood Insurance Program 1362 funding, or any other funding used to acquire the properties are not eligible for FEMA PA demolition funding.

Costs: Eligible costs may include any cost incurred by the applicant to complete the scope of work identified on the DSR(s). Necessary costs of requesting, obtaining, and administering the demolition program are covered by the Subgrantee Administrative Allowance.

Ineligible costs: Title search costs, closing costs, etc. are not eligible for FEMA PA demolition funding. These are costs associated with the acquisition of the property and are the responsibility

of the buy-out funding source. Any costs associated with obtaining SHPO clearance on the properties is not eligible.

Costs associated with removal of contaminated soil, large quantities of hazardous materials, etc., are not eligible costs. These costs are the responsibility of the original owner. Removal of public streets, curbs, gutters, etc., are not eligible.

Seeding is normally not an eligible cost unless seeding is required to prevent erosion on a sloped terrain or there is a local code or regulation that requires seeding of disturbed demolition sites.

Each structure must be inspected for hazardous materials prior to actual demolition of the structure. Costs associated with asbestos inspections, asbestos abatement, third party air monitoring etc., may be eligible for FEMA PA demolition funding.

☐ 7: DAMAGE ASSESSMENT AND DAMAGE SURVEY REPORTS

Source: This discussion is excerpted from the *San Joaquin Disaster Recovery Manual*, 8/95.

Background: Damage assessments and Damage Survey Reports or DSRs are the foundation for FEMA/OES reimbursement after a disaster. The DSRs do the following:

- ◆ provide a description of the damage,
- ◆ set forth the scope work, and
- ◆ give a cost estimate of the work to be performed.

Based upon the damage assessment conducted by the federal/state/local inspection teams, a DSR is written.

It is important to understand the significance of the damage assessment process and the development of the DSR so that the "scope of work" adequately reflects the work needed.

Contents: There are five sections.

SUBSECTION	TOPIC
A	Damage Assessment
B	Types of Damage Assessment
C	Survey Team Staff
D	Signing the Damage Survey Report
E	Facilities Over 50 Years of Age and Archaeological Sites

☐ **A: DAMAGE ASSESSMENT**

Definition: Damage assessment is the systematic process of gathering early estimates in dollars and descriptions of the location, nature and severity of damage sustained by the public and private sectors in an emergency or disaster.

Basis for aid: Damage assessment is the basis for determining the type and amount of state and federal assistance necessary for recovery. Damage assessment is NOT eligible for reimbursement; however, safety inspections are eligible.

Public sector: The public sector category includes damage to public facilities such as roads, bridges, public buildings, schools, hospitals, non-profit educational, utility, emergency, medical, and custodial care facilities.

Private sector: The private sector category includes damage to homes, businesses, farms, private schools and hospitals, and personal possessions.

☐ **B: TYPES OF DAMAGE ASSESSMENT**

Initial assessment: Sometimes called a "window survey," this may be conducted by field responders, or other agencies that can give a quick picture of the incident as they perform other emergency duties.

Safety inspections: This refers to searches for "life or property threatening" situations to decide what actions need to be taken to reduce the threat:

- ◆ search and rescue in buildings,
- ◆ water and sewer line leaks, and
- ◆ unsafe buildings.

Site assessment: When local damage assessment teams review damage sites to collect basic information and initial costs of repairs to present to the Preliminary Damage Assessment teams.

Federal Public Assistance Program

PDA team: Preliminary Damage Assessments (PDA) are begun as soon as it is determined that state or federal assistance may be requested. This data is reported to State OES along with the request for a Gubernatorial Proclamation.

DSR: After a declaration and submittal of "Exhibit B" List of Projects, federal and state teams will meet with the local agency to develop an estimate to repair each site. This cost figure will be used to track the repairs until completed.

☐ **C: SURVEY TEAM STAFF**

Federal/State team: Damage surveys are usually conducted by a Federal/State inspection team. A department representative accompanies the Federal/State inspection team and is responsible for representing the applicant and assuring that all damage and needs for assistance are inspected.

Minimum amount: **NOTE:** State OES will no longer fund DSRs less than \$1000, or any other DSR that FEMA declares ineligible. As of September 3, 1996, in a Presidential declared disaster, OES will only pay the State's portion of the non-federal share of costs deemed eligible for funding by FEMA (refer to Attachment A, memo from Richard Andrews, Director, regarding: State Funding for Public Assistance Projects).

☐ **D: SIGNING THE DSR**

Who signs: The County Local Agent (normally OES), is the only authorized person to sign the Damage Survey Report (DSR) on the Local Representative signature line.

The County Local Agent will confer with the person who participated on his behalf on the DSR team. This discussion will determine if the County should concur or not concur with the findings.

Effect of DSR: By signing Item 16 of the DSR [90-91], the Federal representative indicates that from an engineering point of

Federal Public Assistance Program

view, the content of the DSR provides an accurate and reasonable basis for FEMA to make a determination of eligibility of work and of project costs.

Keep copy:

NOTE: Get a copy of the DSR for your file. Give photos to team only if you have a spare, originals are to be released to the team after a "best" copy has been attempted.

Only estimate:

The DSR, when reviewed, is a recommendation based on an *estimate*. It is not approved for FEMA funding until it is included in the project application which is approved by the Governor's Authorized Representative and by the Regional Director, or their duly authorized representatives.

Review carefully:

Block 13 of the DSR should be reviewed very carefully with each local DSR team member to ensure that the description is a true reflection of what the County deems necessary.



E: FACILITIES OVER 50 YEARS OF AGE AND ARCHEOLOGICAL SITES

National historic preservation act:

FEMA is responsible for complying with Section 106 of the National Historic Preservation Act by determining for each property receiving federal funding the eligibility or potential eligibility for inclusion on the National Register of Historic Places (identification step).

FEMA is also responsible for assessing the effect of projects on each of the eligible properties identified (effects step).

Funding denied:

Funding may be denied if FEMA is not given the opportunity to comply. Inform DSR teams if you know the site has been included on a local, state, or national register.

☐ **8: ENVIRONMENTAL REVIEW REQUIREMENTS**

Source: OES Applicant Briefing Package

Contents: This discussion has six subsections.

SUBSECTION	TOPIC
A	NEPA requirements
B	Preliminary review form
C	Environmental assessment
D	Denial of funding
E	Disaster assistance
F	OES assistance

☐ **A: NEPA REQUIREMENTS**

The Federal Emergency Management Agency (FEMA) and the State Office of Emergency Services (OES) are required by federal law to carry out Public Assistance programs in accordance with all applicable environmental regulations.

This includes all applicable local, state, and Federal laws that apply to the protection of the environment. FEMA cannot fund projects until the requirements of the National Environmental Policy Act (NEPA) have been met.

Regulations for implementing NEPA are found in 40 Code of Federal Regulations (Council on Environmental Quality) Sections 1500-1508. Guidelines for FEMA's handling of NEPA are found in 44 Code of Federal Regulations Part 10.

☐ **B: PRELIMINARY REVIEW FORM**

The inspection team assigned to survey damage at a site will complete a Preliminary Review form to be included in every Damage Survey Report (DSR) for the site.

The form is based on 44 Code of Federal Regulations 10 which state that certain actions undertaken by applicants are *categorically excluded* (CAT X) from further NEPA review but that Extraordinary Circumstances will make a more extensive NEPA review necessary.

☐ **C: ENVIRONMENTAL ASSESSMENT**

If further review is necessary, FEMA may prepare, with input from other agencies, an Environmental Assessment or Environmental Impact Statement to determine if the proposed action may have a significant effect on the environment.

Other local, state, and Federal laws may apply to the review process, such as the Endangered Species Act or the Clean Water Act. FEMA will use the appropriate NEPA document as a decision-making tool in the project approval process.

☐ **D: DENIAL OF FUNDING**

Federal funding may be denied if FEMA cannot comply with NEPA before work begins on a Disaster Assistance Project which may impact the environment. Applicants are responsible for proper and timely assistance in this process.

☐ **E: DISASTER ASSISTANCE PROJECTS**

Disaster Assistance projects are also subject to the requirements of the California Environmental Quality Act (CEQA).

- ◆ Applicants are responsible for conducting their own CEQA documentation through the appropriate state or local agency.

- ◆ CEQA documentation does not substitute for compliance with NEPA.
- ◆ Where both CEQA and NEPA are necessary, an integrated document is encouraged by state and federal laws, to avoid unnecessary duplication of effort.
- ◆ Improved and alternate projects may be subject to NEPA and CEQA review.

☐ **F: OES ASSISTANCE**

The Disaster Assistance Branch of the OES will assist applicants in their environmental compliance activities.

Applicants requiring assistance with environmental issues should contact the nearest OES Regional Office.

☐ **9: HAZARD MITIGATION**

Hazard mitigation: The Regional Director may require cost effective
(Required) hazard mitigation measures not required by applicable standards.

The cost of these measures is fully eligible, in accordance with FEMA public assistance funding criteria.

Grant program: Section 404 of the Stafford Act establishes a Hazard Mitigation Grant Program to fund state and local post-disaster mitigation measures.

More information: Refer to Attachment B for more information on the Hazard Mitigation Grant Program administered by OES.

☐ **10: HISTORIC REVIEW REQUIREMENTS**

Source: Disaster Recovery Public Assistance Applicant Packet for Local Government and Special Districts, OES

Contents: There are four sections in this discussion.

Section	Topic
A	National Historic Preservation Act
B	Process to follow
C	Types of Repairs
D	Denial of federal funding

☐ **A: National Historic Preservation Act**

Purpose: The National Historic Preservation Act was established by Congress in 1966 in order to ensure identification and protection of historic properties.

The Act established the following:

- ◆ National Register of Historic Places and the criteria for nominating properties for the Register,
- ◆ the Advisory Council on Historic Preservation (Council) as an independent federal agency, and
- ◆ designation of State Historic Preservation Officers (SHPOs) appointed by the governors of each state.

☐ **B: PROCESS TO FOLLOW**

Action steps: Following are the steps to take in determining whether properties fall into the category of historic properties and whether additional efforts need to be undertaken with the State Historic Preservation Officer to protect the properties.

STEP	ACTION	COMMENT
1	Consult with SHPO	Section 106 of the Act requires all federal agencies with undertakings affecting historic properties in California to take into account the effects of the undertaking through a consultation process with the California SHPO and the Council.
2	Identify properties	FEMA coordinates through OES with a joint Preservation team to identify and review affected properties.
3	Evaluate properties	Each property is evaluated for eligibility or potential eligibility for inclusion on the National Register of Historic Places.

Federal Public Assistance Program

STEP	ACTION	COMMENT
4	Assess effect of project	The team is also responsible for assessing the effect of projects on each of the properties identified as eligible for the register. The team must coordinate this assessment with input from the California SHPO and the Council.

☐ **C: TYPES OF REPAIRS**

Match materials: Repairs matching existing materials and construction, and minor replacement of materials with like-kind materials and finishes will, typically, be considered as having no effect on the historic significance of the property.

Review of these types of repairs are not expected to cause delays to the normal time period for state and federal funding. Complete or significant demolition and major improvements or alterations to the historic characteristics of the property may require review in a third consultation step.

Coordinate review: The team coordinates review by the California SHPO and Council and other interested parties and utilizes the consultation process to the fullest extent practicable to seek ways to reduce or avoid effects on historic properties.

No resolution: Where resolution cannot be achieved, FEMA shall seek and consider the comments of the Council in reaching final decision on the proposed undertaking.

☐ **D: DENIAL OF FEDERAL FUNDING**

Denial: Federal funding may be denied if FEMA is not given proper assistance and opportunity to comply with this process prior to initiation of construction or other actions which impact historic properties.

Inform team: If the property is already included in a local, state, or national register of historic properties, districts, or sites, inform the team at the time the property is inspected.

Direct questions to OES: Any questions concerning the historic review process should be directed to OES Disaster Assistance Branch at the 916-464-1005.

ATTACHMENTS

- A. Memo from Richard Andrews, Director, regarding: State Funding for Public Assistance Projects.
- B. Hazard Mitigation Program Description, Office of Emergency Services.

REFERENCES

- ◆ Digest of Federal Disaster Assistance Programs, FEMA, DAB-21/June 1989.
- ◆ Disaster Recovery Public Assistance Applicant Packet for Local Government and Special Districts, Office of Emergency Services.

ENDNOTES

1. Debris Management Course, Reference Manual, Emergency Management Institute, National Emergency Training Center, pages 54-59.
2. Ibid, pp.59-65.

CHAPTER 17

CASE STUDIES

Background:

Three case studies are included in this Plan -- the 1991 Oakland Firestorm, and the City of Los Angeles and the City of Santa Clara responses to the 1994 Northridge earthquake. The case studies examine how each city established diversion programs to handle the disaster debris generated within their communities and offer some lessons learned and planning guidelines for future events.

This information is presented in the hope that other jurisdictions can learn from these cities' experiences and incorporate these suggestions into their own pre-disaster plans by maximizing water diversion efforts and utilizing existing resources to the greatest benefit.

Contents:

This chapter consists of three case studies documenting debris management programs instituted after major disasters.

No.	Case Study	Page
1	Oakland Firestorm, Curbside Pickup Program, October 20, 1991	17-2
2	City of Los Angeles, Curbside Pickup Program, following 1994 Northridge Earthquake,	17-6
3	City of Santa Clara 1994 Northridge Earthquake Response	17-15

CASE STUDY

OAKLAND FIRESTORM CURBSIDE PICKUP OCTOBER 20, 1991

Background:

The firestorm that raced through the Oakland Hills on October 20, 1991, destroyed vast amounts of property and vegetation. In fact, to date, it has been recorded as the most expensive fire in history, with the cost of structural damages estimated at \$1.5 billion. A disaster of this magnitude obviously results in an enormous solid waste disposal problem. The following are some of the issues and conclusions resulting from the City's efforts to collect the debris from that firestorm.

Initial Response:

The initial concern for the City was removal of the imminent hazards. The City's primary response to this concern was to provide access to affected areas and remove imminent hazards and hazardous materials. This included the removal of burned automobiles, identifying and removing dangerous and unstable structures and trees, capping exposed sewer and gas lines, installing temporary traffic controls, and identifying and removing hazardous materials.

Erosion Control:

The next immediate priority for the City was the prevention of soil erosion and potential landslides. This was a major concern due to the topography of the Oakland Hills, compounded by the lost vegetation, and the pending wet season that was quickly approaching.

Local contractors. To address this concern, the City enlisted the help of local contractors, the California Conservation Corps, and the East Bay Conservation Corps to install silt fences and hay bales along the hillside to impede landslide. Additionally, the entire burn area was targeted for aerial seeding, while other lots were treated with hydraulic mulching and hydroseeding.

Later in the recovery period, wood recovered was ground up and used as mulch, compost or topsoil additives. In spite of

the significant amounts of rain the area received, no erosion problems were reported.

Cleanup:

The hazardous and household hazardous wastes were targeted for removal before the City clean-up could begin. The City contracted with a private firm to remove visibly obvious household hazardous wastes. Property owners were not charged.

Additional information on household hazardous waste is addressed in Chapter 10, Household Hazardous Waste Program, of this document.

By December 6, 1991, most of the hazardous materials and unstable structures were removed, and full-scale clean-up commenced shortly thereafter. The City contracted with ICF Kaiser Company to clean up the debris.

Master contract:

The City Manager is authorized by emergency ordinance to take action for the protection of life and property in a disaster.

The City of Oakland used the approach of a master contract whereby one prime contractor was hired to oversee the overall cleanup operation, supported by a number of subcontractors. The City began the clean-up in December, 1991; the clean-up was completed six months later.

Zones:

The affected area was divided into three areas, which were each serviced by subcontractors. All general fire debris that was disposed of in a landfill was initially considered hazardous material, under guidelines of the Alameda County Department of Environmental health. Consequently, the debris had to be kept in dedicated cells away from the active municipal solid waste disposal areas.

Negotiate with insurers:

The City also instituted an innovative approach to negotiating payment for cleanup work with FEMA and the major insurers. Insurance companies, FEMA, and OES are all key players in the disaster recovery process. It is essential that each agency agree to their respective roles and responsibilities in handling disasters.

On behalf of the City and residents, the City negotiated with insurance companies and FEMA for reimbursement of the cleanup costs. The City estimated the clean-up costs based on the FEMA/City scope of work. The City then presented the insurance companies with an average clean-up cost per policyholder. The City based the cost estimate on ten kinds of properties, with categories such as a townhouse, upslope/downslope small house, medium house, estate, etc.

ICF Kaiser, the prime contractor, prepared estimates for each category; the estimates were then given to the insurance companies. The insurance companies also prepared their own estimates. The City proposed to FEMA that the insurance company pay the first 75% of the cost, and that FEMA pay the difference.

It was subsequently agreed that the insurance company would pay up front one-third of the cost of clean-up and that the residents would bill the insurance company for the remainder.

Cleanup costs:

In general terms, two thirds of the clean-up costs were covered by homeowners' insurance, while one third was covered by the Federal Emergency Management Agency (FEMA).

NOTE: In meeting with the insurance companies, the Insurance Commissioner had to approve the release of policyholders' names to the City.

- Foundation removal:** FEMA paid for the uninsured. Jurisdictions should note that FEMA does not pay for foundation removal and will deduct foundation work from the resident's policy. FEMA, however, will pay for the debris company to remove debris from the homesite.
- Material recovery:** Bid specifications for the contractors to remove the debris stated that the contractor is responsible for removal and transportation of cut trees to proper recycling or recovery facilities, and that the contractor must segregate metals, concrete, and other recyclables from nonrecyclable debris at the site of generation.
- In addition, the City provided contractors with the names of Bay Area construction and demolition waste recyclers, and required contractors to provide weekly load verification reports to prove that the materials were entering a recycling facility.
- Independent clean-up:** Property owners not wishing to participate in the City sponsored clean-up were given an opportunity to arrange their own clean-up. If the property owner did not complete the clean-up within a given window of opportunity, the City would initiate its own clean-up.
- Residents were not required to recycle material if they did not participate in the City's program. Individuals that did not participate in the City's clean-up did, however, have an incentive to recycle, as a significant cost savings could be achieved when compared to landfill disposal.
- Estimate quantities:** The City was unable to estimate the percentage of debris that was recyclable, but did compile figures on total tonnages recycled.
- The City recycled 10,498 tons of material and collected total of 90,213 tons.

Materials:

The material was broken down into four primary categories:

- ◆ metal (3,828 tons),
- ◆ wood (2,229 tons),
- ◆ concrete and brick (4,441 tons), and
- ◆ general debris (80,485 tons).

It is estimated that the City removed, prior to the initial response phase of City clean-up, 2,000 burned automobiles with another 700 trees removed by Pacific Gas and Electric.

Materials generated:

The uses and markets for the materials generated are described below:

- ◆ The majority of scrap metal was shredded locally and sold to steel mills and smelters.
- ◆ The concrete and brick was crushed and reused in road base material (for more information see Attachment A, fact sheet on Recycled Aggregate).
- ◆ Approximately 5,835 cubic yards of brick remained on burned lots to be reused and did not count in the disposal or recycled tonnages.
- ◆ Much of the wood that was recovered is being stored waiting for a market. Approximately one third of the recovered wood was used for biofuel. It is estimated that half the wood recovered was ground up and used as mulch or compost with the burned parts being converted to topsoil additives.

ATTACHMENT**A. Fact sheet on Recycled Aggregate**

CASE STUDY

CITY OF LOS ANGELES FOLLOWING 1994 NORTHRIDGE EARTHQUAKE CURBSIDE PICKUP PROGRAM

Background: The City of Los Angeles chose to address the issue of collection and processing of earthquake debris through private contractors. The City determined that it was most effective to use the existing expertise of established businesses in the area to address debris collection and processing. The anticipated result would be a shorter learning curve for waste handling and a potential expansion of permanent facilities to process mixed and segregated wastes after cleanup activities were completed.

RECYCLING PROGRAM

Overview: The City of Los Angeles developed a Demolition and Debris Removal Program to handle the debris generated from the 1994 Northridge earthquake. The purpose of the program was to collect residence curbside earthquake debris, and demolish 400+ damaged buildings.

The City collected 2,880,000 tons, and recycled 1,629,800 tons for a 56.5% recycling rate. The City saved approximately 6,350,000 cubic yards of landfill space through its recycling and demolition programs (1,629,800 tons).

Reimbursement: The City explored reimbursement for landfill space replacement costs. FEMA denied the City's request, stating that the City had too many disposal options available, including privately owned and operated facilities.

Recycling option: The City presented a recycling option to FEMA. FEMA also denied this proposal, stating that reimbursement is for "least cost alternatives." FEMA cited the fact that the City did not have a debris recycling disaster plan; further, upon an initial comparison, the recycling tipping fee was more expensive than the disposal fee.

Convince FEMA:

As a result, City staff was forced to prove that recycling should be allowed under the FEMA program. The City explained to FEMA that California law, AB 939, requires jurisdictions to reduce tonnage going to landfills. The City also noted that the recycling program was the most immediate and effective alternative for reducing the impact to landfills.

Based upon FEMA's practice of honoring local policies, the City of Los Angeles' policy of maximizing diversion in accordance with AB 939 and demonstrating the future impact to landfills' capacity satisfied this requirement.

Cost benefits:

The debris transported outside the area translated to a cost/ton ratio increase. In addition, the debris transfer via railroad would require construction of a transfer station and would increase the cost/ton ratio.

Other factors in support of the recycling program were that the additional hauling expense, which added up to a two-hour wait at the landfill, was more costly than a 45-minute wait at the recycling facility. At \$65 an hour cost increase, the tip fee was not the bottom line expense.

Letters of support:

The City also provided letters to FEMA from the U.S. EPA and the CIWMB, which endorsed recycling activities and concurred with federal and state regulations/policies (see Attachment A).

**FEMA/OES
reimbursement
program:**

FEMA reimburses program costs; they do not give advances.

FEMA only pays overtime costs for force account personnel performing emergency work (debris removal). FEMA, however, will pay ALL eligible costs for contracted labor.

☐ **CURBSIDE PROGRAM SETUP**

Pilot program: The City initially conducted a pilot recycling program using three City contractors collecting debris at curbside to evaluate the potential for recycling and estimate disposal costs.

Due to the success of the pilot program, the City initiated a full-scale curbside pickup program using 30 to 50 contractors that were under contract to the City at any one time to collect earthquake debris at curbside. The City also maintained contracts with recycling facilities and landfills to ensure the debris reached the appropriate facility.

☐ **PROGRAM IMPLEMENTATION**

Facilities: The City used several processing and disposal facilities to foster competition which, in turn, would minimize tipping fees and travel time to facilities accepting both source separated material and mixed waste.

Contracts: The City awarded contracts to the contractors based on access to specific machinery to be used in curbside pickup of debris and the ability to mobilize quickly when notified of an area that needed removal of debris.

Diversion language: The contracts included language indicating the City's desires to maximize recycling and indicating that contractors were expected to utilize processing and disposal facilities under contract to the City in particular order of preference in order to achieve that goal. Once baseline disposal and recycling percentages were established in the pilot program, the City incorporated minimum facility recycling rates into the contracts.

Order of priority: The facilities are listed in an order that puts recycling facilities first. Contractors are permitted to go to disposal facilities when recycling facilities are closed, temporarily over capacity, or have waiting times which would inhibit efficiency of collection operations.

Authorization letters:

The City developed authorization letters that the haulers used in lieu of paying the tipping fee at disposal and recycling facilities. The authorization letter allowed the facility to bill the City directly and benefited the hauler who did not have to pay the fee and wait for reimbursement from the City. It also ensured that the contractors would use recycling facilities, since there was no cost to them (Attachment B).

Media campaign:

The City notified residents of the curbside program through a media campaign that encouraged separation of wastes and segregation of household hazardous wastes. The City would scout areas to maximize the effort of the collection crews in attempts to fill the capacity of a truck with a single waste material. This encouraged recycling and transport to source separated recycling centers at a lower facility cost.



LESSONS LEARNED

Background:

The City, and subsequently the State, gained valuable experience from the cleanup of the Northridge earthquake. A great deal of material was recycled and many of the programs implemented during the cleanup will remain as permanent recycling facilities that will help the City achieve waste diversion mandates established in Assembly Bill 939.

As with any program of this magnitude, along with the successes, there are aspects of the program that would be approached differently if the opportunity presented itself again. In other words - lessons learned.

Lessons learned:

The following are some of the lessons learned by the City of Los Angeles, which are excerpts from correspondence with City staff and documentation compiled during the cleanup:

1. Disaster plan must be flexible.

Revise plan

The City indicated that any plan, no matter how well thought out, must be amended at some point in the process. Therefore, those who implement the cleanup must periodically review the operation and be willing to address shortcomings or unforeseen changes in either scope or implementation. Planning is imperative, but no one can anticipate all possible scenarios in addressing a disaster cleanup.

2. Scout neighborhoods.

Locate debris

The City of Los Angeles stressed that it is extremely important to identify the types and locations of debris piled up in the streets prior to dispatching crews to collect it.

This allows for:

- ◆ consolidation of similar types of debris (i.e. wood, aggregate, metal, wallboard, insulation), so that
- ◆ full loads of like material can be brought to source separated processing stations, thus
- ◆ minimizing transportation and disposal costs and increasing the likelihood that the materials will be recycled.

Debris identification

Debris identification can be accomplished in various ways. In hilly areas, the City of Los Angeles scoped the neighborhoods using City staff contractors and marking types of materials and locations on a map. Some contractors will do this prior to dispatching crews, but not necessarily. This is probably something that should be negotiated in the contract.

Although the City of Los Angeles chose to blanket the neighborhoods with mobile crews, a Geographic Information System could also be used for identifying locations. Regardless of the method, the primary goal is to maximize capacity of the cleanup crews while collecting as much similar types of debris as possible.

3. Notify residents of program.

Get the word out

This point may seem obvious, but there are several potential barriers to disseminating information on a curbside pickup program. A City's public outreach program should evaluate all forms of media including: newspaper ads, radio public service announcements, and television public access stations. Be aware of communities where multiple language ads will be necessary. Also, be prepared to pay for the ads. The City of Los Angeles was quoted a price of \$16,000.00 for a quarter-page ad in the *L.A. Times*.

4. Consider only collecting source separated material at the curb.

Source separate

Although the City of Los Angeles did not institute this requirement in its curbside pickup program, staff indicated that source separation is something they would require in future disaster cleanups.

The City of Santa Clara imposed this requirement during cleanup of its earthquake debris and made it work. This would require extensive notification that only source separated material would be collected for free.

Reduce costs

Mixed material could be tagged, and if not removed by the owner within a given time period, be collected for a fee. This could significantly reduce disposal costs, as the majority of materials could go to source separated processing facilities.

5. Institute incentive for haulers

Educate haulers

City staff indicated that one of the most difficult aspects of the program was both educating the haulers on the preferable sites to haul the material to and then ensuring that they followed through on the instructions. As indicated above, the City placed recycling facilities in higher preference to mixed disposal facilities. However, the recycling facilities may not be the most preferable facility in the hauler's mind.

Basis for choosing

The hauler may choose a facility based on distance, familiarity, or absence of truck scales on route rather than recyclability of material or disposal cost, as the City bore the brunt of these costs.

Training

The City developed a training guide entitled *Northridge Earthquake Recycling Requirements for C-21 Contractors*, which lists the City's requirements, materials specifications, and recycling and disposal facilities. All haulers were given the manual and trained on program guidelines.

Even with the training, the City needed to constantly police the haulers to verify that the loads were taken to the preferred locations.

Primary site

An attempt was made to designate a primary disposal/recycle location on a ticket to be presented to the facility operator. If the load was rejected, or the facility was full, the ticket would be stamped at the facility and the load was to be taken to the next facility listed. This was only partially successful.

In some cases the drivers changed the location listed on the tickets avoiding the hierarchy altogether. This process is also very resource intensive as inspectors are needed at each cleanup site prior to hauling to mark the tickets.

Incentive program

In conclusion, the City felt the method that had the most potential for success in ensuring that the high priority facilities (recycling) were visited first, involved some sort of incentive program. If the drivers received some sort of perk for adhering to the criteria, more material would be recycled and a great deal of money would be saved in the form of reduced tipping fees and reduced staff time dedicated towards policing cleanup crews and haulers.

6. Continual oversight by inspectors is needed.

Oversight

As discussed in the previous item, oversight is needed to ensure that the hauler goes to the preferred facility. Additional oversight is needed for the crews loading the debris to ensure that material separation techniques are used.

Inspectors

Inspectors, or incentive programs, are needed to ensure that full loads are taken to the processing facilities rather than half empty trucks. Under the current system, there is no incentive for a hauler to completely fill a truck before going to the disposal/recovery facility. The haulers are paid for their time rather than by weight. The City felt this was necessary; otherwise, there would be no incentive to haul low density materials such as wood and insulation.

7. Document time and cost expenditures.

Documentation

This is extremely important if a jurisdiction anticipates reimbursement from the Federal Emergency Management Agency (FEMA). Comprehensive documentation of all expenditures related to addressing a disaster is necessary for reimbursement through FEMA.

8. Dedicate resources towards segregating waste at curbside prior to commingling during collection.

Contamination

The City of Los Angeles initially collected waste, as is, at the curbside. Unfortunately, a small amount of contamination, such as wood in a pile of concrete rubble, would require the entire load to go to a mixed waste disposal facility or recycling facility. The resulting tip fee would be considerably more than that at a segregated processing facility.

The City then began using crews to pick through piles of debris that had slight commingling of waste to produce individual piles of separated waste that could be hauled to source separated facilities at a reduced disposal cost.

Any jurisdiction that is considering using this type of labor should investigate the potential use of crews from the California Conservation Corps (CCC) or the Employment Development Department (EDD).

9. Plan ahead and secure funds.

Pre-planning

The most important part of a successful curbside collection program is preplanning. Planning is necessary if the program is to be implemented in a timely manner, and funding is necessary if it is to be implemented at all. Even if the program is eligible for reimbursement from a federal program such as FEMA, the FEMA reimbursement will not occur immediately. There needs to be some sort of funding mechanism in place until reimbursement occurs.

ATTACHMENTS

- A. Letters to FEMA from the U.S. EPA and the CIWMB, which endorsed recycling activities and concurred with federal and state regulations/policies.
- B. City of Los Angeles authorization letter.

CASE STUDY

CITY OF SANTA CLARITA 1994 NORTHRIDGE EARTHQUAKE RESPONSE

Background:

The following case study highlights some of the actions taken in the area of waste diversion by the City of Santa Clarita in its efforts to clean up after the Northridge Earthquake. The City of Santa Clarita is located 35 miles northwest of Los Angeles and has a population of 140,000. The City is located 12 miles from the epicenter of the Northridge quake, which struck on January 17, 1994.

Following that disaster, the City implemented a program designed to expedite the cleanup of rubble and to maximize reuse and diversion of the debris resulting from construction and demolition activities that resulted from the earthquake.

Damage:

The Northridge earthquake, and the following aftershocks, resulted in damages estimated at \$300 million citywide. The City compiled data through December 31, 1994, and estimated that it provided free removal and recycling of more than 250,000 tons of earthquake debris, which resulted in a 97% recycling rate. The City expected to be dealing with debris, including that generated from rebuilding, through 1996.

Recycling program:

The City was able to develop and implement an extremely efficient debris recycling program considering that there was no disaster debris management plan in place prior to the earthquake.

Due to the overall success of Santa Clarita plan, other jurisdictions should consider evaluating some of the actions taken by this city and implementing them, in part or as a whole, into their own debris management plans to minimize the amount of waste that is ultimately disposed of in local landfills.

☐ SUMMARY

References:

The following actions taken by the City of Santa Clarita in response to the Northridge earthquake were compiled from information contained in the *City of Santa Clarita Disaster Debris Recycling Reference Guide, Northridge Earthquake, January 17, 1994* and from information obtained from a conversation with Hazel Joanes, Solid Waste Coordinator for the City of Santa Clarita.

3 phases:

The debris resulting from the January 17, 1994, earthquake was generated in three distinct phases.

Error! Bookmark not defined.Phase	Cleanup activities
1	The first phase took the form of mixed debris, which included everything from demolished structures to putrescible waste.
2	The second phase consisted primarily of demolition material from residents clearing their properties of damaged structures.
3	The final phase, which may continue for some time, consists of the waste generated from the new construction and remodeling as residents rebuild, fix, and/or upgrade structures damaged from the earthquake.

Delays:

The renovation and rebuilding phase in any large scale disaster can be delayed beyond what is normally anticipated. This can be due, at least in part, to the following:

- ◆ delays in payments to homeowners from FEMA disaster assistance;
- ◆ delays in payments on insurance claim benefits;
- ◆ inability of regional contractors to keep up with the large volume of work needed; and
- ◆ general economic conditions (during times of high unemployment or lowered property values, property owners are unable or unwilling to go into debt to finance repairs).

Putrescibles: Immediately following the earthquake, the City needed to clear avenues and remove mixed waste, which included putrescible material, to help restore the infrastructure and protect health and safety. The urgency of these needs compounded by the composition of the waste precluded the City from recovering much of this material.

Disposal sites: Because of the earthquake damage to the freeways, the City of Santa Clarita was unable to transport waste to its disposal facility. As a result, on January 25, 1994, the City signed an agreement with Kern County for use of the Bena Sanitary Landfill for permission to dispose of up to 250 tons per day for up to six months.

This agreement was necessary because the Kern County Ordinance requires written authorization from the Board of Supervisors to dispose of out-of-county waste in county landfills.

Mutual aid: Mutual aid agreements between nearby jurisdictions for use of equipment, labor, or disposal capacity in the event of a disaster is worth considering as part of a disaster preparedness plan.

Diversion activities: Once the waste that threatened public health and access was cleared, the City began to address the issue of maximizing waste diversion efforts.

The City began setting up a temporary resource recovery facility to process the disaster related debris.

Disaster debris defined. The City defined disaster related debris as broken concrete, asphalt, block wall rubble, masonry debris, cinder block, clay brick and construction metals attached to masonry (rebar), scrap metal and wood wastes.

Program features: The City's proposed program to collect and divert the disaster debris had five primary features. They were:

#	Feature
1	No tipping fees. This would discourage illegal dumping.
2	Enforcement of illegal dumping prohibition.
3	Provision of debris diversion information.
4	Assurance against hazardous materials or contaminated inerts being dumped.
5	City to assume ownership of material product to ensure reuse.

Ownership of materials:

The City determined these features would maximize recovery and diversion while maintaining an effective collection effort. It should be noted that the City did **not** assume ownership of the material product as proposed in #5.

The City found it more effective to have a contractor assume ownership of the material. Diversion was achieved because the contractor had recycling mandates written into its contract with the City.

FEMA reimbursement is reduced by revenues. The City discovered that assuming ownership of the products and the subsequent revenues from sale of those materials would impede reimbursement from federal disaster relief programs.

Contracts:

In contracting for its clean-up services, the City issued one contract whereby the contractor was responsible for the full range of clean-up activities--collection, hauling, processing, and marketing of the materials. The contractor in turn hired subcontractors to handle various aspects of the clean-up operation.

Temporary storage: The City then secured a 40-acre site for stockpiling and processing the disaster debris. This is an excellent consideration if the land is available. It allows far better recovery and processing of waste.

Permits: Any jurisdiction considering this option should be aware that permits may be required for various state agencies including the Water Resources Control Board, Air Resources Board, and the California Integrated Waste Management Board as well as any local permits that may apply.

Roll-off containers: The City established contracts with three local trash hauling and debris management companies. The City concluded that curbside pickup of earthquake debris would be the most effective method. The City considered using roll-off containers as a collection choice, but dismissed it due to the following reasons:

- ◆ In order to achieve a high level of service, it would require a roll-off box on every corner. It is doubtful that any company could supply this.
- ◆ Roll-off container use would increase the amount of mixed waste deposited in them. This in turn, would reduce the recycling rate.
- ◆ Removing waste from the bins presented the potential for extra equipment since loaders are needed to get debris to dumping level.
- ◆ Roll-off bins represented a potential increased liability.
- ◆ The bins also posed a potentially greater traffic hazard, causing blind spots from roll-offs at every corner versus occasional piles of debris at the curbside.
- ◆ The cost for roll-off bins is potentially more than curbside pickups programs. Beyond the initial capital outlay, the City had to consider that FEMA will only reimburse low cost bid.

CONSIDERATIONS IN DEVELOPING A DEBRIS MANAGEMENT PLAN.

Evaluation factors:	The following are all considerations that should be evaluated when a jurisdiction is planning to implement a disaster-related debris collection and management plan.
Labor:	The City was able to obtain labor assistance from the California Conservation Corps (CCC). This is another area the should be investigated when evaluating manpower needs. Cities and counties developing disaster debris management plans should also evaluate the potential to use manpower from the Employment Development Department (EDD) and neighboring jurisdictions.
Public outreach:	<p>Another critical aspect in developing a successful waste diversion program, regardless of whether it is for disaster debris, involves public outreach.</p> <p>The City of Santa Clarita notified the public of the curbside pickup program through numerous press releases. The press releases included information on:</p> <ul style="list-style-type: none">◆ waste diversion requirements,◆ household hazardous wastes,◆ materials being collected,◆ recycling centers, and◆ requirements to separate the materials for free pick up. <p>The City also published newsletters and flyers on specifics and/or modifications to the program.</p>
Material separation:	The City was able to achieve the high recycling rate by requiring separation of material types at the curb by the residents that wanted the material hauled for free by the City.

The City notified residents of the:

- ◆ materials collected,
- ◆ the names of the haulers that were collecting the material, and
- ◆ lists of local businesses that were accepting recyclables and items for reuse.

Additional notifications were made to the public regarding the available assistance of the CCC in removing block wall rubble and building materials from the curbside and public right of way and any steps that needed to be taken to keep desired materials.

Program extended:

The City of Santa Clarita concluded that debris collection needed to be extended to address the ongoing demolition, renovation, and construction being conducted by its residents. On August 22, 1994, the City extended the collection program through December 15, 1994.

Encroachment permit:

The City notified its residents of the extension along with the requirement that an encroachment permit be obtained prior to placing debris in the gutter.

The City used the encroachment permits as a mechanism to determine where the various materials were being placed, as well as a way of notifying residents that free collection was only provided for those who did not receive FEMA or insurance payments for debris removal.

When residents applied for permits, they were required to sign a statement that they had not been reimbursed for any hauling charges. The City stated that some residents sent in checks to reimburse City for hauling away debris.

Successful program: Overall, the City's program was very successful in recycling and diverting a high percentage of the debris generated from the Northridge earthquake. This is particularly true in light of the fact that the City did not have a comprehensive disaster debris diversion plan in place prior to the earthquake. The City's success can be attributed, at least in part, to its ability to react quickly and to a high level of participation and cooperation by its residents.

PLANNING GUIDELINES

Lessons learned: Although the City's program for diverting waste was a success, other jurisdictions may not experience this level of success without a considerable amount of pre-disaster planning.

With that in mind, the following lessons learned from the Santa Clarita case can be summarized and evaluated by other jurisdictions and potentially incorporated into their own pre-disaster plans in hopes of maximizing waste diversion efforts and utilizing existing resources to the greatest benefit.

☐ 1: Plan for a Disaster

Successful program: Although the City of Santa Clarita response to the January 17, 1994, earthquake was more reactive than proactive, it was still quite successful at diverting a high percentage of the debris generated.

However, most jurisdictions will find that they need to develop a waste management plan for disaster debris if they hope to recycle a reasonably high percentage of the waste generated.

Benefits: By recycling and reusing the debris, a local jurisdiction can save landfill space, help achieve the waste reduction mandate of 50% by the year 2000, and potentially foster new businesses or expand existing operations in the area that process construction and demolition debris.

A good disaster debris management plan will anticipate the types of disaster most likely to occur in the area, and will anticipate the manpower, equipment, processing, storage, and disposal needs.

☐ **2: Assess Processing and Storage Capabilities and Needs**

Centralized site: The City of Santa Clarita found that setting up a centralized storage and processing site greatly enhanced its ability to process and reuse the demolition debris.

When planning for disaster waste management, jurisdictions should determine if centralized storage and processing is an option to pursue. If so, a local, adequate site should be located along with an assessment of the types of permits needed for the site and contacts of appropriate regulatory agencies that would issue the permits.

Sale of recyclables: A jurisdiction should also determine if processing and income from the sale of recyclables will be handled through a contract or not. Ownership and subsequent income from the sale of recyclable debris may have an effect on the amount that is reimbursed from federal agencies such as FEMA. This will need to be evaluated on a case-by-case basis.

Local business capabilities: A good pre-disaster plan will also document local businesses that either process or have the capabilities to process construction and demolition debris.

These types of operations could assist in the processing needs for disaster debris, or gear up to handle the added flow of debris. If successful, a jurisdiction may have new or larger construction and demolition waste processing and recycling operations established after the disaster recovery than it had before.

☐ **3: Assess Labor and Equipment Needs**

Local jurisdictions will not likely have adequate labor and equipment available to handle the tasks of collecting the increased waste generated immediately following a disaster.

Mutual aid: One way to address this need is through a mutual aid agreement with nearby jurisdictions for manpower and equipment. The drawback to this approach is, if the disaster is widespread, the adjacent jurisdiction will likely need its own equipment making it unavailable for others to use.

The City of Santa Clarita was able to employ the assistance of the California Conservation Corps (CCC). Local jurisdictions should look into employing the resources of the CCC or the Employment Development Department (EDD) for the immediate labor needs following a disaster.

☐ 4: Determine Debris Collection Method

Curbside pickup: The City of Santa Clarita chose to implement curbside pickup rather than using roll-off bins for the reasons stated above. The City also implemented a policy requiring separation of materials at the curbside, which greatly enhanced its ability to recycle the materials.

Source separation: Any jurisdiction considering implementing a free program to pick up materials should consider requiring material separation at the curb and implementing some mechanism to enforce it.

The City of Santa Clarita experienced an overall high rate of participation and compliance from its residents. This may not always be the case, especially in larger jurisdictions.

To avoid commingling of debris at the curbside, jurisdictions should consider a mechanism, such as a surcharge, for picking up commingled debris after the initial right of ways have been cleared.

Encroachment permit: The City of Santa Clarita also required residents to obtain an encroachment permit before the City removed the debris

from the curb. The City found that the permit process allowed them to track and coordinate pick-up locations as well as notify residents of any requirements they must meet for the free hauling and disposal service.

☐ **5: Implement Public Outreach**

Participation:

The success of any waste diversion program is determined by the overall participation of the its local residents. The first step in achieving a high rate of participation involves notifying the public of the services available, the goals of the program, and any limitations on the types of materials being collected.

The forms of media used to advertise the program are limited only by the budget allocated. Consideration should also be given towards providing notification to any large non-English speaking populations within the jurisdiction.

☐ **6: Provide Adequate Funding Mechanism**

Funding delay:

Although many of the costs associated with clean-up following a disaster may be reimbursed through programs administered by the State or FEMA, there will be a delay between the time the operation begins and the point that state and federal funding begins. Local jurisdictions will have to fund the initial clean-up in at least the short term. A good disaster plan will anticipate this.

☐ **7: Document Activities**

Reimbursement:

Documenting both the steps taken to divert disaster debris as well as tons diverted will serve several purposes.

First and foremost, for FEMA reimbursement, documentation is required to prove that least cost disposal was used. In some cases, recycling operations will be reimbursed even if they cost more. However, in such cases, the jurisdiction must document that recycling the material is required in an ordinance or charter.

Documenting diversion activities will also assist a jurisdiction in meeting the state mandated waste reduction requirement of 50% by the year 2000.

Finally, documenting the steps taken to divert waste following a disaster will serve as a chronology of activities, based on the successes or failures, to repeat or avoid in future disasters.

☐ 8: Evaluate the Need to Extend Collection Efforts

Estimate program length:

In all disaster debris collection programs, an initial estimate will need to be made on the type and length of services to be provided. As the collection program progresses, periodic assessments of those initial estimates will need to be conducted to determine if any significant modifications will need to be made.

The City of Santa Clarita began assessing the need to extend the collection program around August, 1994. Based on the continued generation of waste from the residents, the City extended its collection program through December 15, 1994.

Program delays:

The City concluded that the continued generation of waste by its residents could be attributed primarily to delayed rebuilding activities. Many of the residents delayed upgrading or repairing damaged structures because of delays in payments from insurance companies or federal assistance. This was compounded by the inability of local contractors to keep up with the high demand for their services following the disaster.

Rebuilding issues:

Local jurisdictions should consider the inevitable lag in building activities that may follow any large scale disaster. Insurance company claims and federal assistance delays will almost certainly increase with the number of residents that are affected. The same can be said for a given number of established local craftsmen and contractors. As the market for their services dramatically and instantaneously increases,

the length of time needed to perform the total number of jobs will also increase.

Extend program. Although each jurisdiction is different in its size, markets, and disaster potential, it is worth the time to consider contingencies in a collection program following a disaster. Plans should be made for potentially extending the program as well as for changes in the types of waste generated.

Wastestream. As the rebuilding process begins, waste streams should vary in composition and be more segregated. The segregation is a natural result of the phases of construction, while the composition would depend on the type of building activities occurring. Beyond actually extending the services, plans should be made to notify the public of any changes in collection procedures and renotifying residents of the eventual discontinuation of the collection.

Conclusion:

The steps and activities taken by the City of Santa Clarita are only one example of options used by one jurisdiction. At the very least, other jurisdictions should evaluate those steps for applicability to potential disasters in their own areas.

Additionally, any actions incorporated into a disaster plan, should be addressed regionally to minimize overlap and confusion. Even if none of the steps in this case study is used, the process of planning for a disaster and the waste that will be generated will reduce the time, money, and efforts needed if that disaster ever occurs.

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